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ASTRONOMICAL

AND

METEOROLOGICAL OBSERVATIONS

MADE AT

– Nav. Dept.ͭ –

THE UNITED STATES NAVAL OBSERVATORY

DURING

THE YEAR 1863.

PUBLISHED BY AUTHORITY FROM

THE HON. SECRETARY OF THE NAVY.

CAPTAIN J. M. GILLISS, U. S. N., SUPERINTENDENT.

WASHINGTON:
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1865.

NOTE.

The present volume has been published according to manuscript prepared and collated by the late Superintendent.

C. H. DAVIS,
Rear-Admiral and Superintendent.

MAY 20, 1865.

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INTRODUCTION.

In August, 1842, a law was enacted authorizing the erection of a "Depot of Charts and Instruments," and the building was completed in September, 1844. In December of 1854 the honorable Secretary of the Navy directed that it should thereafter be styled the "United States Naval Observatory and Hydrographical Office."

The enacting law authorized the President of the United States to locate the building upon any public ground within the District of Columbia not otherwise in use; and the site assigned by him is the square originally designed in the plan of the city of Washington for a National University. It is on the north bank of the river Potomac, in the southwestern part of the city, and contains about seventeen acres, of which the highest point is one hundred feet above the river, the ground sloping thereto both on the south and on the west sides. It is enclosed on the east, south, and west sides by a brick wall, and on the remaining one by a picket fence.

The Observatory buildings consist of a central edifice fifty feet square, with wings to the east, west, and south. The central building is two stories and a basement high, with a parapet and balustrade of wood round the top, and is surmounted by a revolving dome twenty-three feet in diameter, which rests on a circular wall, built to a height of seven feet above the highest part of the roof. The east and west wings were each originally erected twenty-six feet six inches long, twenty-one feet wide, and eighteen feet high; but in the year 1848 the former was extended in length twenty-four feet, so as to connect it with the dwelling of the Superintendent, built directly east of the Observatory during the preceding year. The south wing is separated from the main building by a passage-way ten feet square. It is forty-one feet long, and of the same breadth and height as the others, having, in 1846, been extended twenty feet for the accommodation of a circle in the Prime Vertical. The width and height of the addition are the same as those of the old portion.

From a calculation of the observations made during 1845–'46 the resulting latitude of the Observatory was found to be 38° 53′ 39″.25 north; and it was stated in the introduction to the volume for 1847 that no greater correction than 0.″25 was to be anticipated. A discussion of more recent observations indicates that the adopted result is too great. A more reliable result will be deduced from seventy selected circumpolar stars whose observation to that end was commenced in the latter part of the year. To eliminate as far as possible any constant errors of the nadir point, as determined in the usual way, and errors arising from irregular flexure, or any other cause, the stars are observed by reflection from mercury as well as directly, whenever practicable.

From the chronometric longitude of the Cambridge (Massachusetts) Observatory* (*4h.* 44*m.* 29*s.*5) and the telegraphic difference of longitude (23*m.* 41*s.*54) between its transit instrument and that of the Washington Observatory, the resulting longitude of the latter is

5*h.* 8*m.* 11*s.*0 W.

This value was retained in reduction of the observations for 1863, although most of the late astronomical results indicate a greater distance from Greenwich.

The results referred to are: 1. From 394 Moon culminations observed during 1838–1842, at the old Depot of Charts and Instruments, and European observations, and the trigonometrical measurement between it and the present Observatory = 5*h.* 8*m.* 10*s.*04.†

2. From 279 Moon culminations, observed in Europe and at the Washington Observatory between 1845 and 1860 = 5*h.* 8*m.* 11*s.*6.‡

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* Report of the Superintendent U. S. Coast Survey for 1857, page 266.

† Astronomical and Meteorological Observations, 1862, Introduction, page vii.

‡ Astronomical and Meteorological Observations, 1852, Introduction, page lii.

3. From the solar eclipse of July 28, 1851, as discussed by Professor Benjamin Peirce = *5h. 8m. 11s.57.*[*]

4. From the Pleiades occultations of September 26, 1839, and computed by Professor Peirce = *5h. 8m. 11s.45.*[†] As no sensible inaccuracy can result from retaining the value (*5h. 8m. 11s.0*) adopted in 1861, it has been continued in the reductions.

There are four rooms on each floor of the central building. One is occupied as a library room and office for the Superintendent; two are filled with charts, properly arranged, for distribution to ships of the navy; and the remainder, both on the first and second floors, are assigned to the assistants.

A standard clock, by Kessel, and a standard barometer, by Green, are mounted in the office of the Superintendent. The compensation of the clock is not strictly accurate, but the fluctuations of its rate under changes of temperature are so small as to render attempt at improvement unadvisable. Drawings of the standard barometer will be found in the volume for 1862, and a description of the instrument in the introduction to the Meteorological Observations.

The Meridian Transit Instrument is in the west wing. It was made by Messrs. Ertel & Son, at Munich, with an object-glass of 5.3 inches aperture, and focal length of about 86 inches. The lens was refigured and repolished by Messrs. Alvan Clark & Sons in the autumn of 1862, with decided improvement both in achromatism and definition. Stars wholly invisible during daylight prior to the change can now be observed with great satisfaction; but, except on very rare occasions, its power under ordinary illumination does not extend beyond stars of the 10th magnitude. The axis of its telescope is 42 inches long between the bearing points of the pivots. There are finder circles of 8 inches diameter near the eye-end of the telescope, a striding level, and a reversing carriage of the ordinary construction. The instrument is mounted on monoliths split from the same block of granite, and which are wholly isolated from the floors and buildings.

There are two clocks in this room. The one generally in use was made for the old Naval Observatory by Parkinson & Frodsham, of London. It is supported against a massive granite pier, and has all necessary adjustments for verticality. It has Graham's dead-beat escapement with jewelled pallets; mercurial compensated pendulum; the usual means for altering the length of the rod and putting it in beat; a divided scale screwed to the back of the case, and an index attached to the base of the stirrup that supports the mercury cylinder. The extremity of the index is a delicate knife-edge in the plane of vibration of the pendulum. This knife-edge touches at each oscillation a globule of mercury that is supported on a slender bracket projecting from the centre of the divided scale. There are wires from the mercury globule to a galvanic battery, and a registering apparatus. Since changing its mode of support in 1862 from the side to the front of the pier, its rate has been more satisfactory, but there remain inequalities not accountable by defective compensation, and which are probably due to fluctuations in the strength of the galvanic current, the pendulum moving slower when the current is most active or strongest.

The other clock was designed by Dr. Locke. made by Messrs. Howard & Davis, and put up in 1850. It is secured to the west face of the pier originally erected for the Mural Circle, and is described in the volume for 1846.

The registering apparatus is of two kinds, viz: A Morse fillet of indefinite leng thunwound from a cylinder by clock-work. Two records are made upon the fillet by steel pens, one showing the beats of the pendulum, and the other the instants of observation struck by the observer with the signal key. The other register is a brass cylinder two feet in length and eight inches in diameter, whose motion is regulated by a centrifugal friction governor, so that it revolves once per minute. Its recording pen is attached to a carriage whose rate of motion is controlled by a pendulum. Additional information respecting these instruments is given in connexion with the transit observations.

The Mural Circle is in the east wing, and is mounted upon the east face of a sandstone pier. It is five feet in diameter, and connected with the central portion by twelve radii that are strengthened on their backs by edge bars and united midway by a second concentric circle. To secure homogeneity, if possible, all the preceding portions constitute parts of the same cast. A band of gold and one of platina are inlaid upon the rim perpendicular to the plane of the circle. The former band is divided into spaces of 5′, and the latter to spaces of 1°, each of which is numbered. The minute reading is by means of six equidistant microscopes secured to the face of the pier, and which are illuminated through apertures in the same from a gas lamp placed to the west of it. The instrument has a conical axis three feet long. Under the eastern end of the latter there are friction rollers connected with rods that pass between the circle and the face of the pier, and thence over the top to counterpoises within a cavity of the pier. Its telescope is a cylinder secured to the circle both at the centre and near the extremities. The object-glass has a diameter of 4.0 inches and (as made by Troughton & Simms) a focal length of five feet. As the form of the object-glass was not entirely satisfactory, and its focal length rendered the use of a high magnifying power exceedingly inconvenient, it was placed in the hands of Messrs. Alvan Clark & Sons during the month of November, 1862. The modifications effected by them were an increase of focal length to 5 feet 4 inches, and improvements both in achromatism and defining power. Whilst it was absent, a new eye-piece, after the pattern of that to the Meridian Circle, was made by Mr. John Clark, the machinist of the Observatory. Front and side views of it are shown in the subjoined woodcuts.

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[*] Report of the Superintendent U. S. Coast Survey for 1861, page 195.

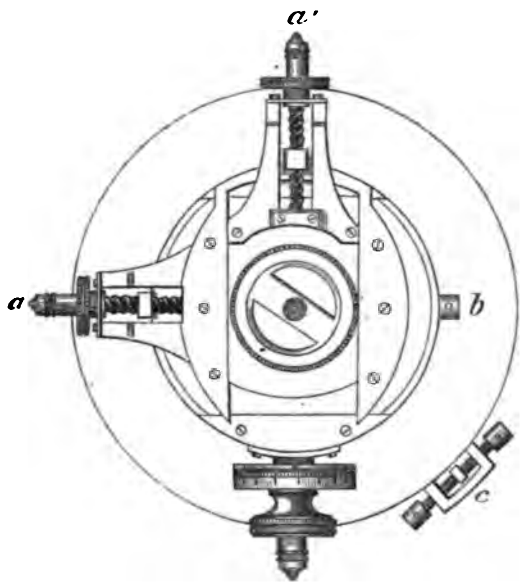
[†] Ibid., page 220.

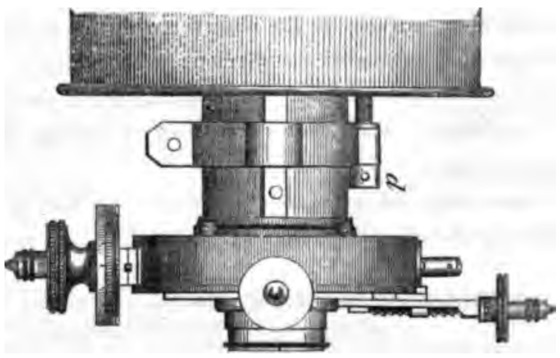
a a′ are coarse screws for rapidly moving the ocular opposite any part of the field.

b, a screw for moving in azimuth the diaphragm with the vertical system of threads.

c, screws for placing horizontal the parallel micrometer threads.

d, screw for adjustment of stellar focus.





A Transit or Meridian Circle is in the same room and east of the Mural Circle. It was originally made by Messrs. Ertel & Son, at Munich, and subsequently remodelled and furnished with new circles by Mr. William J. Young, of Philadelphia. Its telescope has an object-glass of 4.5 inches clear aperture, with a focal length of 58.2 inches. The axis is 28.0 inches long between the bearing points of steel pivots 2.0 inches in diameter. The material changes from the description of it given in the volume of Observations for 1846 are the substitution of circles 40.0 inches in diameter for the defective ones of 30.0 inches, and the removal of the clamp from one of the circles to the axis. The instrument was not in use during the year.

The clock of this room is placed to the south of and equidistant from the two circles. It was made by Mr. Charles Frodsham, of London, and is similar in its general construction and support to that of the west wing. Instead of a knife-edge, its pendulum index terminates in a sharp, two-pronged fork, or crutch, perpendicular to the plane of vibration, and at each oscillation these forks impinge simultaneously upon globules of mercury in separate receptacles of a narrow ledge which rests on a part of the clock case.

Each mercury globule is connected with one pole of a galvanic battery, and when the pendulum is perpendicular the circuit is closed through the crutch which forms the shortest conductor between them. Little use having been made of the Transit Circle for several years, in 1862 the recording apparatus, furnished with the Locke clock, was transferred to the west wing. The Mural Circle clock performs satisfactorily.

The barometer is a Newman standard No. 75. It is mounted against the back of the clock pier. Its tube has a diameter of 0.582 inches, and the reading of the mercury column by Vernier is to 0.002 inches. As the oxidized mercury of its cistern had greatly affected the upper part of the tube, early in 1862 the instrument was taken down and cleaned by Mr. James Green. After being remounted, simultaneous comparisons were made with the standard in the Superintendent's room, the observers being interchanged to eliminate personal peculiarities of reading. A mean of ten comparisons, corrected for capillarity and temperature, shows that Newman No. 75 requires a further correction—0.0001 inches. Additional information respecting barometers of the latter construction will be found in the introduction to the Meteorological Observations.

The thermometers used in connexion with the circle observations are specified in the account of those observations. A table of corrections for recorded readings of the air (external) thermometer is there given.

The other room of the east wing is wholly devoted to nautical and other instruments required in naval operations. Cases to contain the chronometers and shelves, &c., for the other instruments, are so disposed as to accommodate the largest number and to facilitate their examination or distribution. The chronometers are daily compared with a clock in the southwest corner of the room, and at the end of each month their rates are transferred from the comparison papers to record books. The latter instrument was made for the old Depot of Charts and Instruments, by Messrs. Parkinson & Frodsham, and is identical in construction with the clock of the west wing. It is firmly held against a granite pier by strong braces. To facilitate and render the instants of comparison more certain when noise causes the clock-beat to be inaudible, a tilt-hammer and electro-magnet are connected by wires with a battery, and the clock pendulum through a mercury globule. When the circuit is closed, a sharp ringing sound is emitted by the hammer at each vibration of the pendulum. The rate of this clock is more uniform than that of any other in the establishment, Kessel's excepted.

The Transit Instrument in the Prime Vertical is in the north room of the south wing. Its telescope has an aperture of 4.85 inches, with a focal length of 78 inches. It is attached to one extremity of an axis 42 inches long, the other extremity of which carries a counterpoise. The pivots of the axis are hollow cylinders of fine steel 3.5 inches in diameter. Their re-grinding by Mr. William Würdemann was mentioned in the volume for 1861. The telescope and its counterpoise are outside of the supporting pier, but their weights are transferred to the bearing points of the Y's by levers and counterpoises within the pivots and axis. To obviate the necessity for touching the telescope tube either during an observation or for reversal, Mr. Clark, the machinist, has inserted a pair of iron rods in the corners of the cube near the telescope pivot. These rods converge towards the eye-end, where they are united in a handle of convenient length. By this arrangement it is believed that a better general agreement of results and greater accuracy have been obtained. The pier upon which the instrument is mounted is a wide monolith whose central portion has been cut out for the accommodation of a reversing carriage of special construction.

The clock for this room was made by Charles Frodsham, and is mounted against a granite pier erected to the east of the Prime Vertical Transit Instrument. Instead of glass for the mercury of its pendulum cylinder, steel is used, the pendulum rod being screwed into a cap which covers the top of the cylinder. The pendulum index has a single knife-edge, and its divided scale supports a bracket with a mercury globule like the clock of the west wing. There being no recording apparatus for this room, and the clock-beat being faint, a tilt-hammer and battery were put up, to be used when high winds or other noise should make it advisable.

The extreme south room is used for library purposes. It was in charge of Professor Hubbard until August, 1863, and of Professor Harkness after that time. It is the duty of the librarian to make record of all books received, and to render proper acknowledgment for those which have been presented.

The Equatorial Instrument under the dome is mounted upon a massive granite pedestal, which rests upon a hollow conical pier. The foundation for the pier is solid masonry 10½ feet thick, with a diameter of 15 feet. The instrument was made by Merz & Mahler; the object-glass having an aperture of 9.6 inches, and focal length of 14 feet 3 inches. Its hour and declination circles are respectively 15 and 21 inches in diameter. Its *finder* has an object-glass 2.6 inches in diameter and 32 inches focal length. The repeating filar micrometer, of Fraunhofer's pattern, is provided with both external divided scale and a comb at one side of the field, by which the complete revolutions may be read. The comb has a deeper interval at every fifth tooth, and every tooth represents one revolution. The instrument is perfectly equipoised in every position, and the telescope may be kept in motion by an endless screw that works in grooves of the hour circle, and whose time of revolution is regulated by a clock with centrifugal pendulum. A cylinder chronographic apparatus, with Bond's spring governor, and connected with a battery and the clock of the south wing, is used for registering the instants of observation.

The object-glass being slightly under-corrected for color, and its performance not equalling others of like dimensions, in 1862 it was placed in the hands of Messrs. Clark & Sons to refigure. They increased the focal length about an inch, corrected the defective achromatism, and certainly improved the definition; but the flint disk is not a perfect one, and no amount of labor would ever make it an object-glass of the first class.

When not in use, a comet-seeker, made by Merz & Mahler, stands within the rotundo. Its object-glass has an aperture of 3.9 inches and focal length of 32 inches. The instrument is equatorially mounted on a stout shaft of brass, resting upon a tripod which has the ordinary adjusting screws, and the telescope is perfectly balanced in every position. It has hour and declination circles, each of five inches diameter, whose divisions may be read to 4*s*. or 1′ by means of opposite verniers. The present object-glass was made by Messrs. Alvan Clark & Sons. Even during the brightest moonlight, the luminous boundaries of the annular nebulæ in Lyræ are admirably well shown by it. For greater convenience of the observer with the comet-seeker, the roof of the main building is covered with a level grated platform. There are substantial supports for instruments outside of the rotundo, from one or the other of which all parts of the heavens may be seen.

For the purpose of giving correct time to the city, a staff has been placed on top of the dome, and a large but light ball is hoisted thereon at ten minutes before mean noon of every day, except Sundays and the national holidays. After the ball is up, the pulley is connected with an electro-magnetic battery, and at the instant of noon the circuit is broken by the Assistant in the chronometer room.

A more detailed account of the buildings and instruments will be found in "*Report on the plan and construction of the Depot of Charts and Instruments, with a description of the instruments, &c.:* Washington, 1845;" and in the volume of "*Astronomical Observations made during the year* 1845 *at the National Observatory:* Washington, 1846."

In the distribution of its duties under the organic law of Congress, passed in 1862, the Navy Department gave the general supervision of the Observatory to the Bureau of Navigation, of which Rear-Admiral

C. H. Davis is chief. At the commencement of 1861, with only forty naval vessels at sea, there were seven lieutenants employed as assistants at the Observatory. The several fleets numbered 454 vessels at the close of 1863, and a proportionate augmentation in its strictly professional duties necessarily accrued to the establishment. As the paramount claims of service afloat for all professionally educated line officers imperatively withdrew all such assistants from the Observatory, the government authorized, for the performance of its current duties, the appointment of an acting master and four aids from civil life. During the year just closed Professor Hesse and Acting Master Major resigned, and Professor Hubbard died. In the latter, the Observatory lost one of its oldest, most accomplished, and most valued assistants; one as much valued for his amiable disposition and manners, as for great ability and extensive acquirement. Messrs. Asaph Hall and William Harkness, aids, were promoted to the vacancies in the corps of Professors of Mathematics; and Mr. Joseph A. Rogers was appointed to succeed the first named. The other vacancies have not yet been filled. With these exceptions the *personnel* remains as in 1862.

Commander William B. Whiting and Professor Pendleton are in charge of the chart department. The former keeps the records, and accounts incident thereto, of charts received and distributed. To him has also been assigned the compilation of a general catalogue showing at one view the date, scale, &c., of every printed chart, and the nation by which it has been published. When no published national catalogues could be obtained to be used in the compilation, application for information was made to the proper diplomatic representative of the country resident in the United States, and the valuable manuscript contributions courteously transmitted by them are most gratefully acknowledged.

The selection, preparation of lists, and despatch of books and charts for cruising vessels are attended to by Professor Pendleton. Of more than 20,000 sheets distributed, 14,000 had been received from the United States Coast Survey, to which establishment the Navy is under great obligations for the promptness with which its constantly increasing demands are supplied. Nor is the Observatory unmindful of its indebtedness to the Light-house Board, through the courtesy of whose president, Rear-Admiral Shubrick, copies of United States light-house lists and notices to mariners are supplied for all naval vessels. In addition to the duties above cited, Commander Whiting and Professor Pendleton are constantly called upon to make investigations relating to their special department.

After the resignation of Acting Master Major, in April, the Nautical Instrument department was placed in charge of Aid John R. Eastman, assisted by the machinist, Mr. John Clark. The duties of Mr. Eastman involve examinations of new instruments offered and inspections of those purchased, the selections of allowances to vessels of different classes fitting for sea, a daily comparison of all chronometers belonging to the government and on deposit for trial, the dropping of the time ball at noon, and the accounts relating to the receipts and expenditures of instruments at the several naval stations. The Meteorological Journal also is under his care, and must be daily examined and certified by him.

Nautical instruments and the permanent ones of the Observatory which require repairs, and the several galvanic batteries, are attended to by Mr. Clark. The Telescope of the Mural Circle was altered, and its new micrometer eye-end figured on p. vi is a specimen of his workmanship. He also executed an improvement on Micrometers in general, devised by Aid J. A. Rogers, the advantages of which were so obvious that the original micrometer head, made by Mr. Clark, was forwarded to Berlin for application to a new instrument ordered from Messrs. Pistor & Martins. To afford astronomers opportunity to avail themselves of it at an earlier period, a brief description and drawings have been furnished for publication in anticipation of the account of the new instrument.

Experience during two years having shown that American workmen would make, with one exception, all nautical instruments needed by the Navy, and that these instruments in materials, execution, and cost most creditably compared with specimens from the best reputed foreign establishments, it has become a permanent policy to purchase only from domestic manufacturers. As they were compelled to incur considerable outlay in preparing special tools and machinery for the new character of work, they thereby established a right to consideration. But, in addition to this claim to regard, they persevered to success under difficulties with materials and manipulation, and have greatly improved many of the patterns given them to work from. The preparation of colored glass for sextants, the forms of needles for liquid and other compasses, and the best method of insulating them, and the packing of marine barometer tubes to secure them against breakage by concussions from discharges of heavy ordnance, are among the subjects of experiments of the year.

The routine of astronomical observations varied very little from that of preceding years. Alterations to one of the instruments which prevented its use during the earlier months, the resignation of one assistant employed with it, and subsequent death of another, with the comparative inexperience of successors, all combined to prevent so extended a series as we should otherwise have accumulated. Nevertheless, the aggregate result with four instruments consists of nearly 11,000 observations, embracing the sun, moon, the larger planets, eleven asteroids, two comets, sixty-two double stars, sixteen occultations, and differential measurements of thirty-nine stars in the Pleiades group. The great defect of the Observatory arising from the low optical capacity of the telescopes to its meridian instruments became each day more grievous. At the time of its foundation only four asteroids were known, and at opposition all of them were observable with the selected instruments. Of the seventy-five minor planets since added to the list three-fourths of them will forever be invisible with these telescopes even under the most favorable circumstances; and as the number is constantly increasing, each one observed with the Equatorial necessarily involves repeated observations with two other instruments to determine the places of comparison stars. With its original equipment, three instruments and three observers at two epochs were indispensable for obtaining data which a single proper instrument would enable one assistant to determine more satisfactorily by a single observation. Of necessity, the burden of making the most reliable observations of all these bodies devolved upon the very limited number of establishments having meridian instruments of suitable capacities, and probably they had other marked lines of work which, in consequence thereof, were greatly interfered with. In fact, of the two known observatories having both means and men for the work, Greenwich was the only one that attempted to follow them regularly, and the task had become excessively onerous. To my mind it was the imperative duty of the Washington Observatory to assume its portion of the observations and responsibility at the earliest practicable period.

On representation of the facts to Admiral Davis, authority was granted to obtain a Transit Circle commensurate with the demands of Astronomy and the character of the Observatory. The principal dimensions of the instrument decided upon are: 8 Paris inches diameter for the object-glass of the telescope, and 42 inches diameter for the circles. All improvements of known instruments are to be availed of and their defects avoided, and the artists have been instructed to spare nothing which can add to its accuracy or powers. The order was sent to Messrs. Pistor & Martins, of Berlin, in October last, and it is hoped that the instrument will be ready for use early in 1865. The west wing will be enlarged for its special accommodation.

Meanwhile, a letter was addressed to the astronomer royal, (G. B. Airy, esq.,) offering to become responsible for observations of all minor planets visible with our four-inch object-glasses, and a circular was forwarded to each American observatory soliciting co-operation in observations of the whole seventy-nine, the number of asteroids then known. Each American astronomer was invited to select the objects he would observe, and, as far as practicable, to prepare lists of comparison stars in anticipation of the several periods of opposition; the places of such stars to be determined here for all observatories unprovided with proper meridian instruments. Very satisfactory responses were received from each source, and it is announced with satisfaction that the observatories at Albany, Alfred Centre, New York, Ann Arbor, Cambridge, Massachusetts, Cincinnati, and Washington have apportioned the asteroids, and each will make every effort during 1864 to observe its selected numbers. The printed volume of Washington Observations for that year will contain the results for each observer who may desire to avail himself of such publication.

Observations with the Equatorial instrument are made by Mr. James Ferguson, assistant astronomer, and Professor Asaph Hall, who observe with it on alternate nights. The printed pages of results afford conclusive evidence of the skill and ability characterizing their work, but bear no testimony to the fidelity and zeal with which doubtful nights have been watched for possible occasions when they might augment the

Washington contributions to astronomical science. Astronomical matters necessarily devolved upon Mr. Ferguson during the absence of the Superintendent, whose other duties frequently called him to a distance.

It was mentioned in the introduction to the volume for 1862, page xi, that for the purpose of determining the parallax of Mars, and inferentially that of the Sun, two distinct classes of observations had been made near the opposition of the planet, and a discussion of the results was deferred until promised corresponding observations should arrive. These two classes were: 1st. Differential micrometer comparisons near the meridian with pre-selected stars, as detailed in a notice accompanying an Ephemeris issued by the Washington Observatory in the early part of that year. 2d. Meridian observations in combination with certain stars chosen by Dr. Winnecke. Of both classes corresponding measures were received from Dr. C. W. Moesta, director of the National Observatory at Santiago de Chile, and Dr. F. Kaiser, of the Observatory at Leyden; of the first class only from Dr. H. Schultz, at Upsala, and of the second class only from Professor G. W. Hough, at the Dudley Observatory, New York. The two distinct methods by which these observations were computed, together with the individual results and all the details necessary for a repetition of the computations, will be found in Appendix A. From a mean of the observations of class 1, by weight, the solar parallax, computed by Professor Hall, is 8″.8415, and its value from class 2, computed by Mr. Ferguson, is 8″.8340.

In the intervals of duties specified, Professor Hall has found leisure to prepare new elements of (51) Nemausa. The results of his discussion are given in Appendix B.

The Transit Instrument remains under charge of Professor M. Yarnall, who, until September, was aided in the observations by Professor Newcomb, and after that time by Mr. Joseph A. Rogers. Mr. Moses Springer, Aid, assists in transcribing from the chronograph sheets, in the general computations, and prepares the catalogue of results. A careful analysis of their observations will show not only the thorough ability of these officers as observers, but also their fidelity in performing the special duty assigned to them.

At the commencement of the year the Mural Circle was in charge of Professors Hubbard and Hesse, aided by Mr. William Harkness. Mr. Joseph A. Rogers was appointed aid on the resignation of Professor Hesse in April, and was assigned to the Circle, and in August Mr. Harkness succeeded to the professorship vacated by the death of Professor Hubbard. Early in September Professor Newcomb and Mr. Rogers were interchanged, since which time there have been only two observers with the instrument. Notwithstanding the impediments occasioned by these changes, and the length of time during which the instrument was undergoing alterations and repairs, nearly 2,100 observations were made with it. These will satisfactorily bear close scrutiny. The error of assumed latitude, resulting from a part of these observations and already alluded to, is an additional evidence of the skill and care with which they have used this fine instrument.

The Transit Instrument in the Prime Vertical was under charge of Professor Hubbard, aided by Mr. William Harkness, until the decease of the former, after which Professor Newcomb became the responsible assistant. With a single exception, it was employed in observations of *α* Lyræ. Unfortunately, near the time of maximum effect of parallax, constant interruptions in the observations were occasioned by the illness of Professor Hubbard. Of 165 observations made during 1862 and 1863, the resulting declinations from 83 of them for 1860.0 are comprised between + 38° 39′ 20″.10 and + 38° 39′ 20″.41, and the indicated probable error of an observation ± 0″.16. Notwithstanding this close accordance, the results are subject to anomalies the cause of which is obscure.

The observers with each instrument are required to make fair transcripts of their work on the days following the observations. This affords opportunity to elaborate hasty notes, and to rectify or to explain discrepancies. They are prohibited from accumulating a greater number of observations than can be fully prepared for the press within the current year; and whilst each one computes those made by himself, the senior assistant is accountable to the Superintendent for the accuracy of all results from observations with the instrument under his charge. The proof-sheets of the several classes of observations are compared by the assistants who prepared them.

Mr. Thomas Harrison is charged with transcripts of all correspondence, the preparation of accounts for payments, whether for purchased articles or of the employés of the establishment, and the records thereof. Assiduity and experience enable him to perform his duties promptly and with credit.

The watchmen are Mr. Thomas Hays and Mr. Dennis Horigan. The term of duty is eight hours, and one or the other of them is always present. As the title indicates, their principal duty is to protect the buildings and property. But, in addition thereto, they are required to keep the Meteorological Journal, to make a record of all parcels received or sent away, to aid in preparing charts for shipment, to attend visitors at the Observatory, and many other matters for which their experience and long service have shown them to be fully competent.

THE MERIDIAN TRANSIT INSTRUMENT.

This instrument was employed during the year 1863 as follows:

With rare exceptions from accidental causes, the Moon was observed at every visible transit, and in connexion with it some or all of the Moon-culminating stars of the British Nautical Almanac. Observations of the Sun, and the planets Venus and Mercury, were omitted only on Sundays and exceptional cases like the preceding. Jupiter, Saturn, Uranus, and Neptune were frequently noted; Flora twice, and Vesta and Comet II, 1863, on one occasion each. The other objects of observation were: Stars used for comparison by the Equatorial in this or former years; stars of Lacaille's Catalogue north of declination — 45°; stars whose declinations had been determined with the Mural Circle, either in its special work or in the Mural zones observed prior to 1850; the standard circumpolar and time stars of Dr. B. A. Gould, published in a report to the Superintendent of the United States Coast Survey, and a few others not properly to be classed in either of these enumerations.

Until March 14, the transit system consisted of five groups or tallies, each containing five stationary vertical threads. In addition to these, there were three vertical threads movable by a micrometer screw, and two stationary horizontal ones. With the clamp-end of the axis to the east, these tallies were named in the order of the transit of stars above the pole A, B, C, D, E; and E, D, C, B, A, when the clamp was to the west. The tally over which an object was observed is shown by inspection of the intervals between the transits.

The individual threads of each tally were designated by the numbers 1, 2, 3, 4, 5, and in the same order as the letters. The equatorial interval from each thread to the mean of its tally, which was used in the reduction of observations subsequent to November 10, 1862, was decreased by $\frac{1}{600}$ part, and the values adopted in computations prior to March 22 are as follows; the notation corresponds to clamp east:

I. FROM EACH THREAD TO MEAN OF ITS TALLY.

Threads.	A.	B.	C.	D.	E.
	s.	s.	s.	s.	s.
1	+ 2.451	+ 2.121	+ 1.746	+ 3.235	+ 2.967
2	1.565	1.266	+ 0.906	+ 0.543	+ 1.928
3	+ 0.719	+ 0.410	— 0.008	— 0.337	— 0.728
4	— 1.914	— 0.538	0.862	1.272	1.623
5	— 2.821	— 3.261	— 1.785	— 2.169	— 2.544

II. FROM MEAN OF EACH TALLY TO MEAN OF B, C, D.

A.	B.	C.	D.	E.
s.	s.	s.	s.	s.
+ 44.701	+ 22.400	— 0.019	— 22.381	— 44.853

The threads of the diaphragm, inserted March 22, were differently arranged. Tallies A, C, and E have each five threads as before; B and D only three. One vertical thread, A_0, is outside of tally A, and another, E_6, is outside of E. Those two, with A_5, B_1, C_3, D_3, and E_1, constitute a system over which transits, with eye and ear, may be conveniently observed. The movable vertical and stationary horizontal wires are as before.

From a mean of the observed transits of Polaris, δ Ursæ Minoris, and 51 (Hev.) Cephei, combined with careful micrometrical measurements, the equatorial intervals between each thread and the mean of B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, were found to be as follows; the notation corresponding to clamp east:

EQUATORIAL INTERVALS.

Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.
	s.		s.		s.		s.		s.
A_1	+ 35.919			C_1	+ 2.247	D_1	— 11.838	E_1	— 30.216
A_2	34.480			C_2	1.262	D_2	12.997	E_2	32.630
A_3	33.386	B_1	+ 14.935	C_3	+ 0.051	D_3	— 15.038	E_3	33.839
A_4	32.136	B_2	13.007	C_4	— 1.142			E_4	35.136
A_5	+ 29.849	B_3	+ 11.694	C_5	— 2.181			E_5	— 36.454

The interval adopted for $A_0 = + 44^s.936$, and for $E_6 = — 44^s.971$.

About November 3, the threads of tally A were slightly disturbed by contact with one of the movable ones, but subsequent observations show that they resumed their former places, and the cause of the disturbance was remedied.

Except in a very few cases, when the registering apparatus was out of order, the times of transit of all objects more than 5° distant from the pole were recorded by means of an electro-chronograph. The excepted cases are mentioned in the foot-notes to the printed observations.

It has been stated that the index to the clock pendulum is wrought to an extremely slender knife-edge, parallel to the direction of its motion, and that at every vibration of the pendulum this knife-edge touches the surface of a globule of mercury which is placed on a bracket projecting from the centre of the index scale. The pendulum is insulated, and connected with one pole of a galvanic battery, the globule being connected with the other pole by a circuit passing through a key-board for the use of the observer. The latter portion of the circuit is closed or broken, at pleasure, by moving a wedge which presses together two springs within the key-board, or suffers them to separate when it is withdrawn. A second circuit, part of which is common to the first, passes through the same springs and also through another on the outside of the key-board, where it is permanently broken except when the latter spring is pressed against the board.

Nearly all the observations of the year were recorded by means of the cylinder-register. Its pen is a small globe of thin glass drawn to a fine point on one side and with a filling tube on the other. A minute aperture in the point permits the flow of chemical ink without accessory apparatus, and the pen rests continuously upon the paper whilst the cylinder is in motion. Under control of a pendulum, the carriage which holds the pen advances about $\frac{1}{10}$ of an inch per minute, and as the cylinder makes one revolution in the same time, the sheet of paper enveloping the cylinder permits continuous observation during nearly four and a half hours. Whenever the galvanic current from a single Smee's battery passes an electro-magnet the pen moves laterally, its records or signals being in the form of wedges from the general line as a base.

When the temperature of the observing room is below 32° Fahrenheit, the ordinary chemical ink will not flow. Resort is then had to recording paper washed in a weak solution of sulphate of iron, the pen being filled with a preparation of tannic acid and alcohol. During very low temperatures, it is necessary to resort to the Morse fillet.

INSTRUMENTAL ERRORS.

Aided by a collimating eye-piece, the errors of level and collimation were obtained by reversing the instrument over a basin of mercury, and measuring with the micrometer screw of the eye-piece the distance between the central thread and its image seen in the mercury. If we represent by $2\varDelta$ the distance of the central thread west of its image when the clamp-end of the axis is east; by $2\varDelta^1$ the same quantity when the clamp is west; by p the excess of the radius of the clamp-pivot divided by the distance between the pivots; by r the reduction of the central thread to the mean of the system B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, in each tally; and by a the correction for diurnal aberration $= -0^s.016$ in this latitude, we have:

$$c = \tfrac{1}{2}(\varDelta - \varDelta^1) - p + r - a \text{ for clamp east.}$$
$$c = -\tfrac{1}{2}(\varDelta - \varDelta^1) + p + r - a \text{ for clamp west.}$$
$$b = -\tfrac{1}{2}(\varDelta + \varDelta^1) - p \text{ for clamp east.}$$
$$b = -\tfrac{1}{2}(\varDelta + \varDelta^1) + p \text{ for clamp west.}$$

From the mean of a large number of observations made with the spirit-level during the years 1858, 1859, and 1861, the concluded value of p was $-0^s.025$, with a probable error of $\pm 0^s.003$; the numerical value of r for the first system was $\mp 0^s.058$, and for the new one $r = \pm 0^s.051$.

All the observations for determining the errors of collimation and their results are given in the subjoined table, in which the value r of a revolution of the micrometer is $1^s.5865$. When great changes occur in the values of c between consecutive dates, they have been caused by adjustment with the collimating screw.

Date.	2Δ	$2\Delta^1$	c	Date.	2Δ	$2\Delta^1$	c	
							Clamp E.	Clamp W.
1863.	r.	r.	s.	1863.	r.	r.	s.	s.
January 2	− 0.36	+ 0.025	+ 0.055	June 30	− 0.10	− 0.02	+ 0.042	
11	0.20	0.39	0.137	July 22	0.28	+ 0.145	0.180	
12	0.37	0.22	+ 0.137	August 6	0.34	0.35	0.286	
13	0.09	0.03	− 0.051	15	0.41	0.49	0.370	− 0.402
19	0.03	0.09	0.051	17	0.11	0.03	0.066	0.098
31	0.10	0.09	− 0.023	24	0.08	+ 0.24	0.138	0.170
February 14	0.29	+ 0.03	+ 0.029	27	0.24	− 0.05	0.086	0.118
16	0.27	− 0.015	+ 0.003	Sept. 7	0.18	+ 0.13	0.134	0.166
March 9	0.29	0.15	− 0.043	9	0.17	0.07	0.106	0.138
April 1	0.327	0.09	+ 0.105	16	0.16	0.22	0.162	0.194
3	0.275	0.255	0.018	19	0.16	0.15	0.134	0.166
14	0.35	− 0.26	0.046	October 9	− 0.09	0.17	0.114	0.146
30	0.20	+ 0.03	0.102	17	+ 0.02	+ 0.27	0.110	0.142
May 15	0.22	0.16	0.162	November 4	0.34	− 0.19	0.222	0.154
19	0.27	0.20	0.198	4	0.08	+ 0.15	0.038	0.070
June 4	0.36	+ 0.16	+ 0.218	18	0.07	0.22	+ 0.070	− 0.102
12	− 0.01	− 0.28	− 0.098	December 2	+ 0.30	0.22	− 0.022	+ 0.010
23	+ 0.35	0.33	0.262	9	− 0.44	+ 0.41	+ 0.350	− 0.382
23	0.35	0.49	0.326	9	+ 0.02	− 0.03	+ 0.030	0.062
30	+ 0.37	− 0.49	− 0.334	25	+ 0.04	− 0.06	− 0.030	− 0.002

When observations to determine the value of c are tolerably accordant on successive dates, a mean is adopted for the whole period of such accordance; and where the differences are too great to permit inference that they may be due to errors of observation, the changes are assumed to have been uniformly progressive. The values used in the reductions are stated at the bottom of each page of the printed observations.

The distance which the line of collimation passes from the pole, and the point in which the meridian intersects the equator, are used instead of errors of level and azimuth. When the error of collimation is known, the first distance is directly obtained by observations of stars very near the pole, and may be represented by n. The second distance is determined by combining the value of n with the error of the level. Designating the latter by b, the latitude of the Observatory by φ, and representing this second distance by m, we obviously have

$$m = -n \tan \varphi + b \sec \varphi;$$

and the correction applicable to the observed transit of any star to reduce it to the meridian will be obtained by the formula,

$$\text{Correction} = m + n \tan \delta + c \sec \delta,$$

in which δ represents the apparent declination of the star.

An approximate clock-error having been first obtained from one or more equatorial stars, the value of *n* was determined generally by comparing the time of transit of Polaris, δ Ursæ Minoris, λ Ursæ Minoris, or 51 Cephei, with the right ascension given in the star list of Dr. B. A. Gould, before mentioned. There were a few occasions when the preceding named stars were not available, and it was necessary to select others from the same list; but in all cases both the name of the star and the resulting value are given in the following table showing the values of *n* during the year.

But it has been ascertained that the Transit Instrument is subject to a well-marked diurnal oscillation which changes the value of *n* from two to three seconds of arc, and sometimes even more. Its maximum and minimum take place not far from 3*h*. and 15*h*., corresponding approximately to the diurnal epochs of maximum and minimum temperature, a fact indicating that the disturbance proceeds from movement of the piers under thermometric changes. From 15*h*. to 3*h*., or during the day, the eastern pivot of the axis moves to the south and returns to or near to the same azimuth within the twelve following hours. Experiments are still in progress to determine definitely the law of change, but until this be positively known, and the probable error in the value of *n* at any instant is less than that of observations of stars near the pole, the resulting right ascensions of all stars so situated must be vitiated. But as very few observations were made near the period of maximum, only two values of *n* have generally been adopted—one for the day and the other for night observations. Where the observations have extended through many hours of the night it became necessary to use values of *n* proportionate to the time from one standard azimuth star to another. The values used in the reductions are given in the foot-notes at the bottom of each page of the observations:

TABLE OF VALUES OF *n*.

Date.	Determining stars.	*n*.
1863.		s.
Jan. 1	δ Ursæ Minoris	— 0.044
2	Polaris	0.200
3	δ Ursæ Minoris, S. P., 51 Cephei	0.145
4	δ Ursæ Minoris, S. P.	0.140
4	δ Ursæ Minoris	0.085
5	Polaris	0.069
5	λ Ursæ Minoris, S. P.	0.128
6	δ Ursæ Minoris, S. P., 51 Cephei	0.124
7	Polaris	0.150
9	Polaris	0.141
11	Polaris, S. P.	0.188
11	δ Ursæ Minoris	0.106
12	Polaris	0.145
12	δ Ursæ Minoris, S. P.	0.215
12	Polaris, S. P.	0.160
17	Polaris	0.209
19	Polaris	0.111
19	ε Ursæ Minoris, S. P.	0.166
23	Polaris	0.093
24	Polaris	0.096
30	Polaris	0.113
30	δ Ursæ Minoris	0.087
31	51 Cephei	0.213
Feb. 2	Polaris	0.099
2	δ Ursæ Minoris, S. P., 51 Cephei	0.221
2	λ Ursæ Minoris, S. P.	0.261
3	Polaris	0.135
3	δ Ursæ Minoris, S. P., 51 Cephei	0.202
3	λ Ursæ Minoris, S. P.	0.289
4	Polaris	0.093
4	δ Ursæ Minoris, S P., 51 Cephei	0.178
6	δ Ursæ Minoris, S. P., 51 Cephei	0.161
6	Polaris, S. P.	— 0.113
7	Polaris	+ 0.003
7	δ Ursæ Minoris, S. P., 51 Cephei	— 0.168
9	Polaris	0.025
9	δ Ursæ Minoris, S. P., 51 Cephei	— 0.073
10	Polaris	+ 0.101
10	δ Ursæ Minoris, S. P.	— 0.156
1863.		s.
Feb. 10	Polaris, S. P.	— 0.056
12	δ Ursæ Minoris	— 0.100
13	Polaris	+ 0.031
13	δ Ursæ Minoris, S. P., 51 Cephei	— 0.014
13	δ Ursæ Minoris	+ 0.023
16	Polaris	— 0.007
16	δ Ursæ Minoris, S. P.	0.144
21	Polaris	0.003
23	Polaris	0.006
23	δ Ursæ Minoris, S. P., 51 Cephei	— 0.171
25	Polaris	+ 0.037
25	δ Ursæ Min., S.P., 51 Cephei	+ 0.034
25	λ Ursæ Minoris, S. P.	— 0.049
27	δ Ursæ Minoris, S. P., 51 Cephei	+ 0.010
Mar. 1	λ Ursæ Minoris, S. P.	0.014
2	Polaris	0.060
2	δ Ursæ Minoris, S. P.	0.028
3	β Cephei	+ 0.030:
3	λ Ursæ Minoris, S. P.	— 0.114
4	δ Ursæ Minoris, S. P.	+ 0.020
4	51 Cephei	— 0.029
4	λ Ursæ Minoris, S. P.	+ 0.001
5	Polaris	+ 0.033
5	δ Ursæ Minoris, S. P.	— 0.050
5	51 Cephei	0.084
5	λ Ursæ Minoris, S. P.	— 0.058
9	Polaris	+ 0.028
9	δ Ursæ Minoris, S. P.	+ 0.016
9	λ Ursæ Minoris, S. P.	— 0.022
11	Polaris	+ 0.058
11	λ Ursæ Minoris, S. P.	— 0.057
11	δ Ursæ Minoris	+ 0.046
27	Polaris	0.057
27	51 Cephei	+ 0.070
28	Polaris, S. P.	— 0.070
29	λ Ursæ Minoris, S. P.	+ 0.010
30	Polaris	+ 0.007
31	Polaris, S. P.	— 0.075
31	δ Ursæ Minoris	— 0.033

Date.	Determining stars.	*n*.
1863.		s.
Mar. 31	51 Cephei, S. P.	+ 0.016
April 1	Polaris	0.080
1	λ Ursæ Minoris, S. P.	0.089
3	Polaris	+ 0.007
3	λ Ursæ Minoris, S. P.	— 0.007
3	Polaris, S. P.	— 0.042
6	λ Ursæ Minoris, S. P.	+ 0.010
8	λ Ursæ Minoris, S. P.	— 0.040
9	Polaris	0.092
9	Polaris, S. P.	0.044
9	δ Ursæ Minoris, 51 Cephei, S. P.	— 0.037
10	Polaris	+ 0.069
10	λ Ursæ Minoris, S. P.	0.081
10	Polaris, S. P.	0.131
11	Polaris, S. P.	0.178
13	λ Ursæ Minoris, S. P.	+ 0.083
18	Polaris, S. P.	— 0.187
21	Polaris, S. P.	0.187
21	Polaris	0.081
25	Polaris, S. P.	0.191
26	Polaris	0.024
27	Polaris, S. P.	0.030
30	Polaris, S. P.	0.077
30	Polaris	0.003
May 1	Polaris, S. P.	0.034
1	Polaris	— 0.025
2	Polaris, S. P.	+ 0.017
3	δ Ursæ Minoris	— 0.099
3	51 Cephei, S. P.	0.106
4	ε Ursæ Minoris	— 0.078
8	Polaris	+ 0.033
9	Polaris, S. P.	— 0.082
10	Polaris	0.004
11	Polaris, S. P.	— 0.023
11	Polaris	+ 0.003
12	Polaris	— 0.101
14	δ Ursæ Minoris	0.195
14	51 Cephei, S. P.	0.080
14	Polaris	— 0.022
15	Polaris, S. P.	+ 0.042
15	Polaris	0.036
16	Polaris, S. P.	0.061
17	Polaris	+ 0.001
18	Polaris, S. P.	— 0.046
18	Polaris	+ 0.060
19	Polaris, S. P.	0.034
19	Polaris	0.013
20	Polaris, S. P.	0.093
20	Polaris	0.063
21	Polaris, S. P.	0.056
22	Polaris, S. P.	0.054
23	Polaris, S. P.	0.031
27	Polaris, S. P.	0.133
27	Polaris	0.008
28	Polaris	+ 0.093
30	β Ursæ Minoris	— 0.015
31	ζ Ursæ Minoris	— 0.053
31	Polaris	+ 0.011
June 1	Polaris, S. P.	0.046
1	Polaris	0.006
3	δ Ursæ Minoris	0.004
4	β Cephei	0.073
8	Polaris, S. P.	0.070
8	Polaris	0.030
9	Polaris, S. P.	0.133
9	δ Ursæ Minoris, 51 Cephei, S. P.	0.064
9	Polaris	0.093
10	Polaris, S. P.	0.158
10	Polaris	0.135
12	ζ Ursæ Minoris	0.029
15	Polaris, S. P.	0.160
15	ε Ursæ Minoris	0.101
16	δ Ursæ Minoris	0.144
17	Polaris, S. P.	0.103
22	Polaris, S. P.	0.277
23	ζ Ursæ Minoris	+ 0.230
June 23	ε Ursæ Minoris	+ 0.152
July 2	β Cephei	— 0.015
8	δ Ursæ Minoris, 51 Cephei, S. P.	+ 0.019
8	Polaris	— 0.060
9	δ Ursæ Minoris	0.081
9	51 Cephei, S. P.	0.039
10	δ Ursæ Minoris	0.030
18	δ Ursæ Minoris	0.101
18	51 Cephei, S. P.	0.060
18	λ Ursæ Minoris	0.124
20	δ Ursæ Minoris	0.124
20	51 Cephei, S. P.	0.074
21	δ Ursæ Minoris	0.256
21	51 Cephei, S. P.	0.203
21	λ Ursæ Minoris	0.257
21	δ Ursæ Minoris, S. P.	0.093
22	Polaris, S. P.	0.038
22	δ Ursæ Minoris	0.142
24	ζ Ursæ Minoris	0.017
24	ε Ursæ Minoris	0.082
26	ε Ursæ Minoris	0.166
29	λ Ursæ Minoris	0.072
30	λ Ursæ Minoris	0.077
Aug. 3	Polaris	0.236
5	Polaris, S. P.	0.018
5	Polaris	0.186
6	δ Ursæ Minoris, 51 Cephei, S. P.	0.095
6	λ Ursæ Minoris	— 0.118
7	Polaris, S. P.	+ 0.008
8	δ Ursæ Minoris, 51 Cephei, S. P.	— 0.091
8	λ Ursæ Minoris	0.101
10	Polaris, S. P	0.008
10	δ Ursæ Minoris, 51 Cephei, S. P.	0.065
10	λ Ursæ Minoris	— 0.052
11	Polaris, S. P	+ 0.026
11	δ Ursæ Minoris, 51 Cephei, S. P.	— 0.080
11	λ Ursæ Minoris	0.119
12	Polaris, S. P.	— 0.042
15	Polaris, S. P.	+ 0.053
15	δ Ursæ Minoris, 51 Cephei, S. P.	— 0.072
15	λ Ursæ Minoris	0.124
17	Polaris, S. P.	0.112
17	λ Ursæ Minoris	— 0.319
18	Polaris, S. P.	0.000
19	Polaris, S. P.	+ 0.063
19	δ Ursæ Minoris, 51 Cephei, S. P.	0.018
19	λ Ursæ Minoris	0.002
20	Polaris, S. P	0.075
20	δ Ursæ Minoris, 51 Cephei, S. P.	+ 0.023
20	λ Ursæ Minoris	— 0.034
21	Polaris, S. P.	+ 0.100
22	Polaris, S. P.	0.092
22	δ Ursæ Minoris, 51 Cephei, S. P.	+ 0.012
23	δ Ursæ Minoris	0.000
24	Polaris, S. P.	— 0.021
24	δ Ursæ Minoris	0.046
24	λ Ursæ Minoris	0.082
26	λ Ursæ Minoris	— 0.211
27	Polaris, S. P.	0.051
27	δ Ursæ Minoris, 51 Cephei, S. P.	0.160
27	λ Ursæ Minoris	— 0.298
28	Polaris, S. P.	+ 0.099
28	λ Ursæ Minoris	+ 0.024
28	Polaris	— 0.022
29	Polaris, S. P.	+ 0.067
30	Polaris	— 0.230
31	Polaris	— 0.184
Sept. 1	Polaris, S. P.	+ 0.115
1	λ Ursæ Minoris	— 0.087
1	Polaris	— 0.152
2	Polaris, S. P.	+ 0.071
2	λ Ursæ Minoris	— 0.079
3	Polaris, S. P.	+ 0.109
4	Polaris, P. P.	+ 0.066
4	λ Ursæ Minoris	— 0.138

Date.	Determining stars.	*n*.	Date.	Determining stars.	*n*.
1863.		s.	1863.		s.
Sept. 5	Polaris, S. P.	+ 0.102	Oct. 28	δ Ursæ Minoris	— 0.220
5	λ Ursæ Minoris	0.012	28	Polaris	+ 0.297
7	λ Ursæ Minoris	+ 0.018	29	δ Ursæ Minoris	0.277
9	λ Ursæ Minoris	— 0.139	29	δ Ursæ Minoris, S. P.	0.043
15	λ Ursæ Minoris	+ 0.093	31	δ Ursæ Minoris	+ 0.239
16	λ Ursæ Minoris	— 0.001	31	Polaris	— 0.059
20	δ Ursæ Minoris, 51 Cephei, S. P.	— 0.052	31	δ Ursæ Minoris, S. P.	0.078
21	Polaris, S. P.	+ 0.023	Nov. 1	δ Ursæ Minoris, S. P., 51 Cephei	0.098
21	δ Ursæ Minoris	0.042	1	λ Ursæ Minoris	— 0.241
21	λ Ursæ Minoris	+ 0.015	1	Polaris, S. P.	+ 0.141
22	Polaris, S. P.	— 0.035	2	Polaris	0.091
22	λ Ursæ Minoris	— 0.046	2	λ Ursæ Minoris, S. P.	0.022
23	Polaris, S. P.	+ 0.030	3	Polaris, S. P.	0.021
23	λ Ursæ Minoris	— 0.132	4	δ Ursæ Minoris	+ 0.126
24	Polaris, S. P.	+ 0.116	4	Polaris	— 0.033
25	Polaris	— 0.165	4	Polaris, S. P.	+ 0.060
26	Polaris, S. P.	+ 0.038	6	Polaris	— 0.118
27	Polaris	— 0.207	6	Polaris	+ 0.095
28	Polaris, S. P.	+ 0.265	7	δ Ursæ Minoris	0.046
28	λ Ursæ Minoris	+ 0.015	10	Polaris, S. P.	0.173
28	Polaris	— 0.156	11	Polaris, S. P.	0 193
29	Polaris	— 0.206	12	Polaris	0.047
30	Polaris, S. P.	+ 0.083	12	Polaris, S. P.	+ 0.113
Oct. 3	Polaris, S. P.	0.054	13	Polaris	— 0.014
5	Polaris, S. P.	+ 0.066	13	Polaris, S. P.	+ 0.067
5	λ Ursæ Minoris	— 0.006	16	Polaris, S. P.	0.043
6	Polaris, S. P.	+ 0.157	17	Polaris, S. P.	0.152
8	γ Cephei	— 0.014	18	Polaris	0.046
9	Polaris, S. P.	+ 0.050	19	Polaris, S. P.	0.220
9	λ Ursæ Minoris	— 0.018	22	Polaris, S. P.	0.107
9	Polaris	— 0.156	24	Polaris, S. P.	0.088
12	Polaris, S. P.	+ 0.063	25	δ Ursæ Minoris, S. P., 51 Cephei	0.000
12	δ Ursæ Minoris	+ 0.070	26	δ Ursæ Minoris, S. P.	0.070
12	λ Ursæ Minoris	— 0.070	26	Polaris, S. P.	0.154
12	Polaris	0.200	29	Polaris, S. P.	0.123
13	γ Cephei	— 0.028	30	λ Ursæ Minoris, S. P.	0.221
16	Polaris, S. P.	+ 0.024	Dec. 1	Polaris	0.189
17	δ Ursæ Minoris	+ 0.011	2	Polaris	0.272
17	Polaris	— 0.109	3	Polaris	0.183
18	λ Ursæ Minoris	+ 0.030	4	δ Ursæ Minoris	0.271
18	Polaris, S. P.	— 0.016	4	Polaris	0.178
19	λ Ursæ Minoris	0.212	4	Polaris, S. P.	0.068
19	Polaris	— 0.299	5	Polaris, S. P.	0.004
19	Polaris, S. P.	+ 0.033	7	Polaris	0.050
20	δ Ursæ Minoris	+ 0.053	8	Polaris	0.092
20	λ Ursæ Minoris	— 0.073	9	Polaris, S. P.	0.248
20	Polaris, S. P.	+ 0.083	10	δ Ursæ Minoris	+ 0.106
21	λ Ursæ Minoris	0.026	10	Polaris	— 0.164
22	δ Ursæ Minoris	+ 0.033	14	Polaris	— 0.055
22	λ Ursæ Minoris	— 0.156	15	β Cephei	+ 0.087
25	Polaris, S. P.	0.015	15	Polaris	0.031
26	Polaris	0.271	16	Polaris	+ 0.083
26	Polaris, S. P.	0.127	23	δ Ursæ Minoris, S. P., 51 Cephei	— 0.165
27	ζ Ursæ Minoris, S. P.	0.330	24	δ Ursæ Minoris, S. P., 51 Cephei	0.092
27	Polaris, S. P.	— 0.007	25	δ Ursæ Minoris, S. P., 51 Cephei	— 0.024
28	δ Ursæ Minoris	+ 0.008	30	β Cephei	+ 0.017

It will readily be seen that if *m* be neither large nor subject to great variation, it will be eliminated through the clock error, and therefore for astronomical purposes it may be entirely neglected. In effect, it actually was combined with the clock error in the reduction of observations.

The clock error was obtained from the corrected transits of one or more of the standard stars whose mean places for 1860.0 and proper motions are given in the following table. The apparent places of the same stars at the date of observation were obtained by application of the corrections for precession, &c., computed with constants of the American Ephemeris, including all the terms which can affect the second decimal of the seconds. The difference between the corrected transit and the computed apparent A. R. is a clock error for the instant of observation. The several results were then divided into groups, during which the clock rate might be supposed to have been uniform, and the means of the several groups were adopted as the errors at the corresponding mean of the times of transit. Usually there were but two groups for each day; one including the observations by day, and the other the observations by night.

The clock rate was obtained by two methods:

First. By equations of condition between the several stars of a group.

Second. By the change of error in the intervals between the groups, corrected for personal equation when necessary, and divided by the time elapsed.

The rate adopted for any group was a mean deduced from the changes of error between it and the preceding and following groups.

Except during a very few days, the clock made by Parkinson & Frodsham was used throughout the year. Its rate has not been as uniform as is desirable. Although the diurnal polar azimuth variations changed the values of *m*, and consequently the apparent clock errors, the rates fluctuated more than could be thus accounted for, and as the pendulum appeared to be over-compensated, an ounce and a half of mercury was removed from it on the 9th of December. The result is not yet sufficiently known.

The following list contains the names of all the stars used for time and azimuth, with their adopted mean right ascensions and proper motions for the fictitious epoch 1860.0—the instant when the sun's mean longitude was 280°. Of most of them both the mean places and the proper motions have been derived from the cited discussion by Dr. B. A. Gould, and the others were obtained from a comparison of the Observations at Greenwich, Paris, and Washington.

MEAN R. A. FOR 1860.0, AND PROPER MOTIONS OF STARS USED IN THE REDUCTION OF OBSERVATIONS MADE WITH THE TRANSIT INSTRUMENT.

Name.	α	μ	Name.	α	μ
		s.			s.
α Andromedæ	0 1 9.43	+ 0.010	α Canis Majoris	6 38 58.61	— 0.041
γ Pegasi	0 6 1.79	+ .001	ε Canis Majoris	6 53 7.50	+ .001
12 Ceti	0 22 53.68	— .002	γ Canis Majoris	6 57 25.50	.005
β Ceti	0 36 33.60	+ .014	δ Geminorum	7 11 45.57	+ .000
ε Piscium	0 55 40.84	— .003	α^2 Geminorum	7 25 39.74	— .013
Polaris	1 8 2.32	+ .073	α Canis Minoris	7 31 58.35	.048
θ Ceti	1 17 1.57	— .005	β Geminorum	7 36 44.68	.047
η Piscium	1 23 59.73	+ .001	φ Geminorum	7 44 55.50	.000
ν Piscium	1 34 8.89	— .004	6 Cancri	7 54 54.89	.005
β Arietis	1 46 54.74	+ .006	ρ Argus	8 1 34.98	.005
α Arietis	1 59 17.28	.014	η Cancri	8 24 36.52	.005
67 Ceti	2 10 0.11	.007	ε Hydræ	8 39 21.69	.012
ξ^2 Ceti	2 20 43.15	+ .001	κ Cancri	9 0 9.67	.003
γ Ceti	2 36 2.96	— .009	83 Cancri	9 11 9.80	.012
α Ceti	2 54 57.86	— .002	α Hydræ	9 20 42.46	.001
δ Arietis	3 3 37.77	+ .010	ε Leonis	9 37 53.91	.003
η Tauri	3 39 10.06	.001	μ Leonis	9 44 47.63	.019
γ Eridani	3 51 29.92	.004	π Leonis	9 52 48.80	.003
o^1 Eridani	4 5 2.03	.000	α Leonis	10 0 54.80	— .017
ε Tauri	4 20 26.71	.008	γ Leonis	10 12 14.94	+ .020
α Tauri	4 27 53.44	+ .004	ρ Leonis	10 25 26.26	.000
ι Aurigæ	4 47 52.86	— .001	*l* Leonis	10 41 53.74	— .001
11 Orionis	4 56 34.33	+ .002	χ Leonis	10 57 47.66	— .024
ε Leporis	4 59 32.16	.000	δ Leonis	11 6 39.52	+ .012
β Orionis	5 7 48.65	.000	δ Crateris	11 12 20.63	— .008
β Tauri	5 17 26.64	.002	τ Leonis	11 20 44.23	+ .002
δ Orionis	5 24 51.33	.001	ν Leonis	11 29 46.89	.000
α Leporis	5 26 33.42	+ .002	β Leonis	11 41 54.98	— .034
ε Orionis	5 29 6.64	— .001	ο Virginis	11 58 4.66	— .013
α Columbæ	5 34 34.88	— .003	ε Corvi	12 2 55.77	+ .001
α Orionis	5 47 35.60	+ .002	η Virginis	12 12 44.66	— .004
ν Orionis	5 59 34.76	+ .001	β Corvi	12 27 2.31	.004
μ Geminorum	6 14 29.43	+ .006	α Canum Venaticorum	12 49 28.42	.020
γ Geminorum	6 29 37.42	+ .004	θ Virginis	13 2 42.28	0.002
51 Cephei	6 33 38.38	— .106	α Virginis	13 17 49.31	— 0.002

Name.	μ	α	Name.	α	μ
		s.			s.
ζ Virginis	13 27 33.71	— .019	ζ Aquilæ	18 58 58.49	— 0.003
η Bootis	13 48 1.14	— .003	ω Aquilæ	19 11 14.65	+ .003
τ Virginis	13 54 31.40	+ .005	δ Aquilæ	19 18 26.32	.015
α Bootis	14 9 16.60	— .079	κ Aquilæ	19 29 21.46	.000
β Bootis	14 25 47.72	.008	γ Aquilæ	19 39 36.20	.001
ε Bootis	14 38 52.38	.003	α Aquilæ	19 43 57.10	.036
α Libræ	14 43 8.34	.008	β Aquilæ	19 48 26.15	.002
ψ Bootis	14 58 26.85	.010	τ Aquilæ	19 57 17.95	+ .004
β Libræ	15 9 28.64	.007	λ Ursæ Minoris	20 3 53.40	— .071
μ Bootis	15 19 12.15	— .010	α² Capricorni	20 10 17.03	+ .003
α Coronæ Borealis	15 28 45.66	+ .010	ρ Capricorni	20 20 52.26	— .006
α Serpentis	15 37 22.44	.009	ε Delphini	20 26 31.43	— .001
ε Serpentis	15 43 50.38	+ .009	α Cygni	20 36 39.58	.000
δ Scorpii	15 52 3.64	— .001	μ Aquarii	20 45 5.97	+ .001
β Scorpii	15 57 18.07	.002	ζ Cygni	21 6 58.73	— .001
δ Ophiuchi	16 7 0.69	— .006	1 Pegasi	21 15 36.81	+ .009
α Scorpii	16 20 49.73	.000	β Aquarii	21 24 11.18	.002
ζ Ophiuchi	16 29 27.18	+ .001	ξ Aquarii	21 30 17.74	.006
ζ Herculis	16 36 0.56	— .034	ε Pegasi	21 37 18.60	.003
κ Ophiuchi	16 51 2.56	— .022	μ Capricorni	21 45 39.55	.023
ε Ursæ Minoris	17 0 26.89	+ .015	α Aquarii	21 58 35.52	.000
α Herculis	17 8 15.89	— .001	θ Aquarii	22 9 26.63	.007
θ Ophiuchi	17 13 24.84	— .003	π Aquarii	22 18 7.59	.000
b Ophiuchi	17 17 49.36	.000	η Aquarii	22 28 9.68	.004
α Ophiuchi	17 28 26.19	+ .007	ζ Pegasi	22 34 28.79	+ .003
μ Herculis	17 40 58.84	— .025	λ Aquarii	22 45 18.48	— .003
γ² Sagittarii	17 56 48.94	+ .005	α Piscis Australis	22 49 54.42	+ .024
μ Sagittarii	18 5 23.48	+ .001	α Pegasi	22 57 47.34	.004
η Serpentis	18 14 3.95	— .041	γ Piscium	23 9 54.48	.047
δ Ursæ Minoris	18 17 30.20	+ .029	κ Piscium	23 19 45.34	.005
1 Aquilæ	18 27 35.26	— .003	B. A. C. 8213	23 27 49.30	.048
α Lyræ	18 32 11.90	+ .018	ι Piscium	23 32 45.06	.026
β Lyræ	18 44 54.67	.000	δ Sculptoris	23 41 37.69	.009
σ Sagittarii	18 46 34.98	.000	ω Piscium	23 52 7.43	+ 0.010

PERSONAL EQUATION.

To eliminate, as far as possible, the influence upon resulting Right Ascensions which might arise from one observer using clock errors that had been determined from observations of another, on several occasions each observed a group of clock stars within the period embraced by observations of the other. The following are the results; Y. and N. indicating Profs. Yarnall and Newcomb, respectively, and R. Mr. Joseph A. Rogers:

Date.	Star.	Y.—N.
Feb. 3	α Andromedæ	+ 0.11
	γ Pegasi	0.16
4	β Arietis	0.21
	α Arietis	0.17
9	α Arietis	0.16
12	β Arietis	0.16
	α Arietis	0.21
13	α Aquilæ	+ 0.05
23	β Arietis	— 0.02
	α Arietis	+ 0.03
	δ Arietis	0.05
	η Tauri	0.06
	o¹ Eridani	0.03
June 8	α Arietis	0.20
	α Ceti	0.12
9	α Ceti	0.28
July 9	α Tauri	+ 0.15
	Mean	+ 0.125

Date.	Star.	Y.—R.
Oct. 19	α Cor. Bor.	+ 0.07
	α Serpentis	0.18
22	β Lyræ	0.03
29	α Lyræ	0.11
	β Lyræ	0.07
Nov. 17	α Aquilæ	+ 0.11
	Mean	+ 0.095

Or, observations made by Professor Newcomb, under the above circumstances, require to be diminished by 0.12s., and those of Mr. Rogers by 0.09s. The former value was used in the reductions of observations by Professor Newcomb, but the latter was not deemed sufficiently well determined to authorize its adoption.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date and initial letter of the observer's name. The day commences at apparent noon.

Column 2 contains the name of the object, or its approximate declination when it is not contained in catalogues. The following system for nomenclature was adopted.

Stars contained in the catalogue of the British Association are designated in the order of preference—

1. By the constellation and Bayer letter there given.
2. By the constellation and Flamsteed numbers there given.
3. By their number in the catalogue.

Exceptions are made in the case of Polaris, λ Ursæ Minoris, and some of Dr. B. A. Gould's list of standard circumpolar stars, to which the number of Hevelius is prefixed.

Other stars found in published catalogues are designated by the name and number in the catalogue.

The following abbreviations occur:

O. Arg. N., Oeltzen's Catalogue from Argelander's Northern Zones.

O. Arg. S., Oeltzen's Catalogue from Argelander's Southern Zones.

B. Z., Bessel's Zones.

Those which have been used as comparison stars in observations with the Equatorial, but which cannot be recognized in published catalogues, have the same designation as in the Equatorial observations of the objects compared with them, or a number followed by the letter W.

Column 3 contains the number for reference.

Column 4–14, inclusive, contain the seconds and tenths of the transits over the several threads as noted by the observer at the time, or as subsequently read from the chronographic record. But as there are twenty-one threads, over each of which observations were taken at different times, the numbers over the column may not represent the thread at which a star was observed, and this datum can become known only by comparing the observation with the equatorial intervals.

The transits of stars below the pole are recorded over the several threads from right to left, so that the same numbers correspond to the same threads that they would refer to if the transit occurred above the pole.

Column 15 contains the minutes, seconds, and decimals of a second, obtained by taking the mean of the preceding times of transit over the threads observed.

Column 16 contains the sum of the corrections necessary to reduce the numbers of the preceding column to the clock time at which the object crossed the great circle passing through the pole and the point in which the line of collimation intersects the Equator. It consists of two parts:

1. For broken observations of stars from the mean given in column 16 to the mean of the threads B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, by the formula,

$$R = \text{Equat. int.} \times \sec \delta;$$

or if the star was so near to the pole that the difference between the sine and arc of the reduction was sensible,

$$\text{Sin } R = \sin \text{Equat. int.} \times \sec \delta.$$

In case of the Moon, the reduction was computed by Prof. Airy's formula, published in the Greenwich Observations:

$$\frac{3600 + I}{3600} \times \frac{\text{Sin ☽'s Geo. Z. D.}}{\text{Sin ☽'s App. Z. D.}} \text{ Sec ☽'s Geo. Z. D.},$$

in which I represents in seconds of time the Moon's increase of right ascension in one hour of longitude as given in the Nautical Almanac. The factor $\frac{\text{Sin ☽'s Geo. Z. D.}}{\text{Sin ☽'s App. Z. D.}}$ has been tabulated for the latitude of the Observatory as a function of the parallax and geocentric declination.

In case of the Sun and Planets, the correction was computed in the same manner as for stars, and increased by their respective motions in right ascension during the intervals expressed by the correction.

2. The correction for collimation and polar azimuth computed by the formula

$$\text{Correction} = n \tan \delta + c \sec \delta$$

of which the method of obtaining the factors n and c has already been stated. This correction combined with m was usually so small that further modification for the motion and parallax of the Moon in reducing observations of that body was rarely necessary.

Column 17 contains the correction for clock error obtained as stated, and brought forward to the instant of observation by the rate. The clock error used is that obtained by the observer whose initial is given in column 1.

Column 18 contains the apparent right ascension of the object, or part of the object actually observed, obtained from the sum of the three columns immediately preceding. When only one limb of the Sun or a planet was observed, the sidereal time of the transit of the semidiameter over the meridian, as given in the American Ephemeris and Nautical Almanac, will be found in the following column. From 273 transits of both limbs of the Sun, observed during this and the two years last preceding and compared with the sidereal times of the semidiameter passing the meridian as given in the American Ephemeris, there results $C - O = + 0.06$s., a correction applied to the computed value in the few cases when one limb only was observed.

Column 19 contains the corrections applicable to the preceding column to reduce the observations of the stars to their mean places 1860.0*d*.4, or the instant when the Sun's mean longitude was 280°. These were computed from "constants for the reduction of fixed stars" given in this volume, and in the preparation of which the coefficients are the same as those used in the American Ephemeris and Nautical Almanac. The corrections include no proper motions except those used in the list of time and azimuth stars published in this introduction.

There will be found at the foot of the page the adopted clock and instrumental corrections, observations of the reflected image of the middle wire, position of the clamp E or W, and such notes as the observations called for. The notes are of two classes, viz: Those made at the time of observation, and those which result from subsequent examination of the observation. The former are printed in Roman and the latter in italic letters.

A comparison is given, pp. 351 to 362, of the observations of the Sun, Moon, and Planets, with their tabular places in the American Ephemeris and Nautical Almanac for 1863.

The several observations of each fixed star reduced to their mean place for 1860 + 0*d*.4, are collected in pages 285 to 334. As a general but not always imperative rule, the results for fundamental polar or clock stars have been excluded when any change in the tabulated places of those stars would affect the resulting right ascension by an amount equal to one-third of such change.

The magnitude of each star, when estimated by the observer at the time of observation, is given in the same tables. Usually, estimates were made from the appearance of the star in the telescope; but with the brighter stars, the conclusion thus arrived at was occasionally combined with unassisted eye estimate made at the same transit. When doubtful the observer marked his estimate with a colon.

Observations recorded as doubtful and of less weight than usual are indicated by colons, but these marks are never annexed in consequence of accordance or discordance of results. When a result is discordant, reference is had to the original record, and the observation is retained or rejected as is warranted by the evidence there found. All rejected results are enclosed in parentheses.

Each observer computes the corrections and prepares his own observations for the press, and every precaution is taken to insure accuracy in the calculations and correct copies in the printing.

THE MURAL CIRCLE.

The Mural Circle was not in use during any part of the months of January or February. Throughout the remainder of the year the Sun, Moon, and larger Planets were frequently observed, but it was principally employed in observations of special stars within the Zones observed prior to 1851; stars of comparison in Equatorial observations; stars from Lacaille's Catalogue north of — 45°, and not subsequently observed, and a special list of circumpolar stars from which to obtain a new value for the latitude. These last observations were commenced only towards the close of the year.

The stationary diaphragm of the eye-piece made by Mr. Clark, and already referred to, contains the same number of vertical threads arranged in the same manner as were those of the old one, but the intervals of the former vary somewhat from those of the latter. In the new system, as in the old one, the threads of the middle tally are designated by numerals 1–5, and the others by Roman letters I–IX, the middle thread receiving the common designation V. From the transits of ten circumpolar stars, observed over all the threads on the night of March 11, 1863, the following equatorial intervals were obtained of V from each of the others.

VERTICAL SYSTEM.

I.	II.	III.	IV.	1.	2.	4.	5.	VI.	VII.	VIII.	IX.
s. 53.04	s. 40.58	s. 28.84	s. 15.66	s. 3.30	s. 1.60	s. 1.68	s. 3.46	s. 16.32	s. 28.76	s. 40.80	s. 52.88

There are only two horizontal threads, *A* and *B*. These, as first inserted by Mr. Clark, were parallel, distant from each other about 12″, and movable by a micrometer-screw.

Immediately after the circle was again ready for use, an investigation was instituted to test the regularity of the micrometer-screw just mentioned. The mode of operation was as follows:

The screw being placed at an integral number of revolutions, say 30*r*.0: the circle and telescope were turned gently until the northern horizontal thread, as seen directly, was by estimation as far south of its image seen in a basin of mercury, as is the interval between the two threads. The two threads and their images thus formed three equal spaces. The correctness of this estimation was tested by turning the micrometer backward to destroy the equality of the intervals and restoring them by motion of its screw in the opposite direction. The reading of the divided head was then noted. The micrometer-screw was then turned forward until the horizontal threads and their images formed a like series of horizontal intervals south of the threads when the divided head was again read. The difference between the two readings is equal to twice the distance of the threads in turns of the micrometer-screw value. Five similar measurements were made and their mean value accepted.

The micrometer-screw was then successively placed at 30.1*rev.*, 30.2*rev.*, 30.3*rev.*, &c., &c., and measurements precisely similar to the preceding were repeated for each tenth of a revolution; the precaution being taken that all the measures of any one revolution were made by the same observer and on the same evening.

After these double interval measures the actual interval was measured in a similar manner, commencing the reading with coincidence of the north thread and its image. Then, the south thread and its image seen in the mercury formed equal spaces north and south of the northern thread. A mean of five measures for each interval was adopted as the value for that interval.

The reading of the micrometer head for any position was supposed to require a correction of the form

$$\alpha \cos \mu + \beta \sin \mu + \alpha_1 \cos 2\mu + \beta_1 \sin 2\mu,$$

μ being the reading of the head, expressed in arc. Then, the error of a measurement between the readings μ and μ_1 would be

$$\alpha (\cos \mu - \cos \mu_1) + \beta (\sin \mu - \sin \mu_1) + \alpha_1 (\cos 2\mu - \cos 2\mu_1) + \beta_1 (\sin 2\mu - \sin 2\mu_1.)$$

The difference between individual measurements noted by an observer and the mean of similar ones of the special revolution of the micrometer-screw made on the same evening affords an equation of condition between α, β, α_1 and β_1. The final ones obtained for the values of the coefficients in decimals to the fourth place of a revolution were as follows:

I. FROM MEASUREMENT OF DOUBLE INTERVALS.

rev.				
At 20	6.16 $\alpha = + .0483$	6.16 $\beta = + .0512$	9.71 $\alpha_1 = - .0208$	9.71 $\beta_1 = - .0349$
30	6.03 $+ .0697$	6.03 $+ .0732$	9.62 $- .0394$	9.62 $- .0179$
40	5.96 $+ .0235$	5.96 $+ .1054$	9.57 $- .0098$	9.57 $- .0095$

II. FROM MEASUREMENT OF SINGLE INTERVALS.

rev.				
At 20	9.55 $\alpha = + .0931$	9.55 $\beta = + .0800$	5.68 $\alpha_1 = - .0188$	5.68 $\beta_1 = - .0186$
30	9.54 $+ .0283$	9.54 $+ .0602$	5.74 $- .0037$	5.74 $- .0139$
40	9.50 $+ .0267$	9.50 $+ .1433$	5.94 $- .0138$	5.94 $- .0014$

The discordances of these equations being .01 of a revolution, or three-tenths of a second, afforded proof so conclusive of its irregularities as to cause rejection of the screw, and a new one was made by Mr. Wm. Würdemann, which was ready for insertion April 3. For the few observations made with the old one the following correction, corresponding to 30*rev.* was used:

$$+ .0063 \cos \mu + .0086 \sin \mu - .0023 \cos 2 \mu - .0003 \sin 2\mu.$$

When the new screw was ready for use the threads of the vertical system were replaced in the old scores of the diaphragm, and the two horizontal threads were placed at about 9″ apart. The following readings to determine the periodic irregularities of the micrometer-screw were then made by the three observers in the manner before described, except that in measuring the double interval, April 8, the movement of the screw was retrograde from the even tenth of the revolution instead of forward. In this case the interval is regarded as negative. Each number is a mean of five readings, and the third column of each series shows the residual error of each measurement, the mean of the whole ten being adopted as the correct measure.

The measurements are given in the order of the number of revolutions irrespective of the dates on which they were made.

MEASUREMENT OF DOUBLE INTERVALS.

April 14. Observer, H.			April 16. Observer, H.			April 8. Observer, Ha.		
r.	r.		r.	r.		r.	r.	
19.5280	20.0506.	— 178	22.0002	22.5724	+ 144	24.5028	23.9324	— 99
.5968	.1150	222	.1132	.6960	250	.6008	24.0154	242
.6988	.2096	296	.2014	.7772	180	.7020	.1206	202
.8020	.3198	226	.2904	.8646	164	.7934	.2092	230
19.9090	.4438	— 56	.4042	22.9658	+ 38	24.9058	.3348	— 98
20.0056	.5584	+ 124	.5100	23.0474	— 204	25.0164	.4662	+ 110
.1060	.6798	334	.5922	.1284	216	.1014	.5570	168
.1974	.7592	214	.7058	.2390	246	.2002	.6650	260
.2882	20.8524	238	.8104	.3440	— 242	.3042	.7638	208
20.3912	21.9382	+ 66	22.9038	23.4750	+ 134	.3954	.8468	+ 126
						25.4942	25.9224	— 99

April 20. Observer, Ho.			April 10. Observer, H.			April 9. Observer, He.		
r.	r.		r.	r.		r.	r.	
27.0204	27.5952	+ 296	29.5016	30.0288	— 64	34.5158	35.0448	— 181
.1100	.6834	282	.6006	.1158	184	.6350	.1508	313
.1878	.7530	200	.6988	.2132	192	.7548	.2746	273
.3040	.8634	+ 142	.8036	.3290	— 82	.8464	.3810	— 125
.4134	27.9564	— 20	29.9148	.4488	+ 4	34.9244	.4786	+ 71
.5082	28.0406	128	30.0036	.5498	126	35.0350	.6050	229
.6230	.1404	278	.1124	.6636	176	.1168	.6848	209
.7558	.2796	214	.2156	.7668	176	.2066	.7784	247
.8506	.3764	194	.3068	.8528	+ 124	.2874	.8478	133
27.9348	.4714	— 086	30.4146	30.9402	— 80	35.4006	35.9484	+ 7

April 17. Observer, H.			
r.	r.		
29.4986	30.0300	—	215
.6036	.1262		303
.7078	.2362		245
.8028	.3404		153
29.9020	.4548	—	1
30.0040	.5800	+	231
.0950	.6710		231
.2004	.7708		175
.3012	.8746		205
30.4008	30.9614	+	77

April 18. Observer, Ha.			
r.	r.		
32.0020	32.5622	+	84
.1008	.6754		228
.2028	.7776		230
.2970	.8622		134
.3972	32.9566	+	76
.5022	33.0384	—	156
.5986	.1304		200
.7010	.2248		280
.8026	.3380	—	164
32.9062	33.4626	+	46

April 16. Observer, H.			
r.	r.		
37.0150	37.5894	+	197
.0800	.6490		143
.1878	.7536		111
.3028	.8848		73
.4036	37.9716	+	133
.5082	38.0512	—	117
.5856	.1272		131
.7034	.2386		195
.7978	.3290	—	235
37.8964	38.4528	+	17

April 14. Observer, H.			
r.	r.		
39.5012	40.0292	—	101
.5958	.1132		207
.6934	.2142		173
.7908	.3132	—	157
39.9048	.4456	+	27
40.0194	.5746		171
.1192	.6788		215
.2038	.7612		193
.3036	.8532	+	115
40.4022	40.9320	—	83

MEASUREMENT OF SINGLE INTERVALS.

April 18. Observer, Ha.			
r.	r.		
19.2908	19.6110	+	315
.3944	.7044		204
.4936	.7886	+	43
.5992	.8724	—	175
.6946	19.9610		243
.7982	20.0690		199
.8914	.1696		125
19.9998	.2826	—	79
20.1022	.4024	+	95
.2006	.5080		167
.2980	.6222		315
20.3986	20.7108	+	204

April 18. Observer, Ha.			
r.	r.		
22.0012	22.2930	—	89
.1046	.4032	—	21
.2036	.5264	+	221
.3086	.6332		239
.3976	.7110		127
.4968	.8006	+	31
.6026	.8932	—	101
.6998	22.9880		125
.7992	23.0848		151
22.8960	23.1836	—	131

April 9. Observer, He.			
r.	r.		
24.4764	24.7602	+	86
.5610	.8308	—	54
.6556	24.9098		210
.7972	25.0562		162
.8866	.1476		142
24.9776	.2392	—	136
25.0838	.3600	+	10
.1684	.4596		160
.2584	.5532		196
25.3098	25.6100	+	250

April 17. Observer, H.			
r.	r.		
26.9908	27.2956	+	15
27.0935	.4112		144
.1848	.5128		247
.2864	.6170		273
.3876	.7000		91
.4800	.7858	+	25
.5994	.8916	—	111
.7132	27.9924		241
.8112	28.0968		177
27.8924	28.1688	—	269

April 17. Observer, H.			
r.	r.		
32.0168	32.3116	—	30
.0926	.3952	+	48
.2040	.5208		190
.2916	.6138		244
.3958	.7100	+	164
.5134	.8082	—	30
.5914	32.9834		58
.6934	33.0712		200
.8044	.1846		176
32.9030	33.2856	—	152

April 20. Observer, He.			
r.	r.		
36.9838	37.2492	—	106
37.0706	.3490	+	24
.1626	.4540		154
.2496	.5470		214
.3732	.6616		124
.4656	.7436	+	20
.5506	.8212	—	54
.6642	37.9278		124
.7994	38.0554		200
37.8624	38.1328	—	56

April 14. Observer, H.			April 11. Observer, Ha.			April 20. Observer, He.		
r.	r.		r.	r.		r.	r.	
29.4996	29.7872	− 43	34.5060	34.7974	− 78	39.4428	39.7302	+ 124
.5948	.8818	49	.5942	.8806	128	.5636	.8302	− 84
.6888	29.9648	159	.7014	34.9802	204	.6722	39.9248	224
.7978	30.0772	125	.8058	35.0844	206	.7928	40.0444	234
24.8908	.1726	− 101	.8878	.1772	98	.8822	.1352	220
30.0016	.2944	+ 9	34.9940	.2888	− 44	39.9966	.2554	− 162
.1000	.3904	− 15	35.1020	.4066	+ 54	40.0786	.3620	+ 84
.1958	.5028	+ 151	.2062	.5290	236	.1814	.4750	186
.3062	.6184	203	.2978	.6184	214	.2754	.5786	282
30.3966	30.7012	+ 127	35.3920	35.7164	+ 252	40.3400	40.6408	+ 250

It will be seen that the single interval measures near 20*rev.* were extended through more than an entire revolution. In this case the results from corresponding tenths of a revolution have been combined.

The several equations which result from the individual series of measurements are as follows:

I. FROM MEASURES OF SINGLE INTERVALS.

r.				
At 20.0	7.92 $\alpha = +$ .0592	7.92 $\beta = +$ .1098	9.67 $\alpha^1 =$ 0.0000	9.67 $\beta^1 = -$ .0273
22.5	8.10 .0302	8.10 .0891	9.50 − .0200	9.50 .0179
25.0	7.61 .0255	7.61 .1045	9.87 + .0013	9.87 − .0194
27.5	8.15 .0659	8.15 .1040	9.44 − .1031	9.44 + .0111
30.0	7.94 .0375	7.94 .0671	9.66 .0063	9.66 .0291
32.5	8.05 .0460	8.05 .0926	9.55 .0082	9.55 + .0034
35.0	8.07 .0590	8.07 .0969	9.53 .0062	9.53 − .0232
37.5	7.62 .0333	7.62 .0780	9.87 .0095	9.87 .0100
40.0	7.60 + .0399	7.60 + .1320	9.88 − .0024	9.88 − .0084

II. FROM MEASURES OF DOUBLE INTERVALS.

r.				
At 20.0	9.92 $\alpha = +$ .0494	9.92 $\beta = +$ .1398	2.51 $\alpha^1 +$ .0050	2.51 $\beta^1 = -$ .0029
22.5	9.83 .0614	9.83 .1138	3.55 − .0074	3.55 .0156
25.0	9.81 .0595	9.81 .1136	3.75 + .0034	3.75 .0049
27.5	9.90 .0686	9.90 .1190	2.80 + .0175	2.80 .0147
30.0	9.90 .0581	9.90 .0995	2.68 − .0079	2.68 .0054
32.5	9.87 .0451	9.87 .1125	3.20 .0083	3.20 .0069
35.0	9.89 .0806	9.89 .1140	2.92 .0169	2.92 .0109
37.5	9.85 .0436	9.85 .0876	3.37 − .0094	3.37 .0434
40.0	9.93 + .0632	9.93 + .0872	2.37 + .0112	2.37 − .0048

Combining the results obtained from the two sets we obtain the following for the correction to the micrometer reading on account of the periodical error of its screw:

$$\Delta \mu = +\ 0r.0058 \cos \mu + 0r.0115 \sin \mu - 0r.0007 \cos 2 \mu - 0r.0011 \sin 2 \mu.$$

The corrections applied to every observation with the new screw for each hundredth of a revolution will be found in the subjoined table. It will be seen that the maximum error is less than half a second of arc.

CORRECTION OF MICROMETER READINGS,

From April 3, 1863, to December 31, 1863.

Mic. reading.	Corr.	Mic. reading.	Corr.	Mic. reading.	Corr.	Mic. reading.	Corr.
r.	r.	r.	r.	r.	r.	r.	r.
.00	+ .0051	.25	+ .0123	.50	− .0065	.75	− .0108
.01	56	.26	122	.51	74	.76	.0102
.02	61	.27	120	.52	83	.77	.0096
.03	66	.28	117	.53	91	.78	90
.04	71	.29	112	.54	.0099	.79	84
.05	+ .0076	.30	+ .0107	.55	− .0106	.80	− .0077
.06	81	.31	.0102	.56	113	.81	71
.07	86	.32	.0096	.57	119	.82	64
.08	90	.33	90	.58	124	.83	57
.09	94	.34	83	.59	128	.84	50
.10	+ .0098	.35	+ .0075	.60	− .0131	.85	− .0043

CORRECTION OF MICROMETER READINGS,

From April 3, 1863, to December 31, 1863.

Mic. reading.	Corr.	Mic. reading.	Corr.	Mic. reading.	Corr.	Mic. reading.	Corr.
r.	r.	r.	r.	r.	r.	r.	r.
.11	+ .0102	.36	+ .0067	.61	− .0133	.86	− .0036
.12	106	.37	59	.62	135	.87	29
.13	109	.38	51	.63	137	.88	22
.14	112	.39	42	.64	138	.89	15
.15	+ .0115	.40	+ .0033	.65	− .0139	.90	− .0009
.16	118	.41	24	.66	139	.91	− .0002
.17	120	.42	14	.67	137	.92	+ .0004
.18	122	.43	+ .0004	.68	135	.93	10
.19	124	.44	− .0006	.69	133	.94	16
.20	+ .0125	.45	− .0016	.70	− .0131	.95	+ .0022
.21	125	.46	26	.71	128	.96	28
.22	124	.47	36	.72	124	.97	34
.23	124	.48	46	.73	119	.98	40
.24	123	.49	56	.74	114	.99	46
.25	+ .0123	.50	− .0065	.75	− .0108	.00	+ .0051

From the preceding measures we obtain the following angular measures for the interval between the horizontal threads.

INTERVAL BETWEEN THE HORIZONTAL THREADS.

At—	By single interval.	Arc equiv.	Obs'r.	Double interval.	Interval.	Arc equiv.	Obs'r.
r.	r.	"		r.	r.	"	
20.0	0.2907	9.11	Ha.	0.5404	0.2702	8.48	H.
22.5	0.3007	9.43	Ha.	0.5578	0.2789	8.75	H.
25.0	0.2752	8.63	He.	0.5612	0.2806	8.80	Ha.
27.5	0.3033	9.48	H.	0.5452	0.2726	8.55	He.
30.0	0.2919	9.15	H.	0.5432	0.2716	8.52	H.
32.5	0.2978	9.34	H.	0.5518	0.2759	8.65	Ha.
35.0	0.2992	9.38	Ha.	0.5471	0.2736	8.58	He.
37.5	0.2760	8.66	He.	0.5547	0.2774	8.70	H.
40.0	0.2750	8.62	He.	0.5381	0.2690	8.44	H.

The effect of personal differences in the measurements is obvious, and as the absolute value of the interval cannot be considered as concluded from the results, the investigation will be repeated, and a third series will be instituted with the circle and its microscopes. The value adopted in the reduction of observations is $0r.2916 = 9''.14$. The observations made to that end have failed to develop any sensible deviation from parallelism in these two threads.

The observations of 1863, March 18, were made whilst the old screw was still in use with horizontal thread *A*, which is the one farthest from the micrometer head. In their reduction to the centre, the adopted correction is $-0r.2013 = -6''.28$. This value was obtained by Prof. Hesse in the manner detailed for the new screw.

INCLINATION OF HORIZONTAL THREADS.

The inclination of the horizontal threads to the horizon was found from the differences between the readings of the micrometer head when stars passed two threads of the vertical system symmetrically placed with respect to thread V divided by the distance between the outside threads at which the observations were made. The following table contains the adopted values, in decimals to the fourth place, of a revolution of the micrometer head, for the correction to mean of threads I–IV, corresponding to an equatorial interval of $34s.5$.

Date.	Inclination.	Date.	Inclination.
	r.		r.
Mar. 13—18	+ 0.0226	Aug. 10	— .0388
April 3—5	+ .0335	12	0.0523
May 1	— .0085	14	.0044
4—10	.0093	17	.0019
11—15	.0110	18	— .0030
17—22	— .0153	19—26	+ .0053
June 1	+ .0343	20	— .0032
8	.0187	22	+ .0053
12	.0192	28	.0000
15	.0259	Sept. 1—3	.0061
17—30	.0292	4	+ .0026
July 1—11	.0283	5—12	— .0090
15	.0000	15	.0170
20	.0351	16—18	.0095
22	.0140	21—22	.0112
24	+ .0332	23	.0116
31	— .0301	24—25	.0120
Aug. 6	— .0581	26	— .0125

Each result in the preceding table is derived from one or at most a small number of observations, and it is frequently the case that the errors of an observation are much greater than the value of the quantity to be determined. For these reasons apparent discordancies must not be regarded as proceeding from actual changes in the horizontality of the system, but in most cases from inadequate data.

From September 26 to the close of the year the value adopted for the reduction of all observations is $i = -r.0125$.

VALUE OF A REVOLUTION OF THE MICROMETER-SCREW.

The value of a revolution of the new micrometer-screw was obtained by aid of the collimating eye-piece and the circle graduations. As the use of the screw is limited in practice to arcs less than 5′, only the divisions corresponding to circle readings 179° 55′, 180° 0′, 180° 5′, and the included mid-spaces, were employed in this determination.

The method of proceeding was as follows: The circle having been set at reading 180° 0′, the microscopes were read and the coincidence of the micrometer threads seen directly with the images reflected from the mercury were noted in the manner already detailed for finding irregularities of the screw and referred to again in connexion with Nadir determinations. The circle was then moved until one of the other named divisions was under the pointer; all of the microscopes were read and the micrometer-screw turned until its threads and their images were coincident as in the preceding case. The number of revolutions and parts of a revolution of the screw passed through is evidently a measure of the arc of the circle included between the readings of its two positions, and from which the former is derivable. The corrections for accidental errors of graduation given in the table of the volume (II) for 1846, Introduction, p. xii, were then applied to the circle readings, and the micrometer readings being corrected by the quantities in the preceding table and for the small excess or defect of circle reading from the exact arc. The following observations were made on the dates respectively appended. When the circle was set at 179° 57′.5 or 180° 2′.5 both the preceding and following divisions were read with the microscopes:

Date.	CIRCLE READINGS.						Micrometer readings.		Temp.
	Mic. A.	Mic. B.	Mic. C.	Mic. D.	Mic. E.	Mic. F.			
1863.	° ′ ″	″	″	″	″	″	r.	r.	°
April 22	179 59 60.4	60.8	60.2	62.9	61.7	61.4	29.6588	29.7902	56.0
	54 58.8	59.4	59.2	62.0	61.0	61.0	20.0290	20.1620	"
	57 29.5	30.6	29.5	35.0	33.7	32.5	24.8910	25.0210	"
	32.7	31.9	29.8	35.8	34.3	31.1			
	180 2 29.5	29.3	26.7	33.3	32.0	29.0	34.3802	34.5336	"
	27.3	29.0	27.2	32.3	31.1	29.4			
	4 61.1	62.8	61.2	64.9	63.9	63.0	39.2568	39.4052	"
	179 59 60.8	61.8	60.7	63.3	62.6	61.8	29.6780	29.8116	"
May 6	179 59 61.4	58.1	61.3	62.7	59.8	61.6	30.0942	30.6456	61.0
	180 4 62.4	59.3	61.3	63.7	61.2	62.5	39.7056	40.2192	"
	179 54 61.8	59.0	61.9	62.9	60.5	62.4	20.5654	21.0628	"
	57 32.3	29.8	29.4	34.3	31.3	30.3	25.3228	25.8622	"
	29.3	27.9	29.7	33.1	30.5	31.5			
	180 2 32.0	29.0	28.9	34.3	31.6	29.6	34.8842	35.3978	"
	29.4	28.8	29.1	32.8	30.0	30.5			
12	179 59 58.8	56.8	57.7	56.2	60.1	58.5	30.1542	30.3046	75.0
	180 4 60.4	59.3	58.7	59.0	62.4	60.2	39.8108	39.9392	"
	179 54 59.4	58.0	58.3	58.0	61.8	59.4	20.6532	20.7818	"
	180 2 31.0	31.3	30.0	31.1	35.7	31.7	35.0656	35.2024	"
	32.6	32.0	29.0	31.8	36.1	29.9			
	179 57 30.5	29.5	27.6	30.0	34.3	28.2	25.4608	25.6006	"
	28.7	29.2	28.2	30.0	33.9	30.0			
	59 60.6	61.8	60.2	60.6	64.0	60.6	30.2744	30.4194	"
13	179 59 60.5	59.0	62.0	60.7	60.3	57.6	30.1138	30.6592	"
	54 60.0	58.2	60.9	60.0	59.8	58.0	20.5496	21.0546	"
	180 2 30.7	28.2	28.5	31.2	31.2	25.9	34.8944	35.4174	"
	29.2	29.1	30.0	30.8	30.5	27.2			
	179 57 31.7	30.3	30.0	32.3	32.3	26.9	25.3582	25.8872	"
	32.1	30.0	30.8	31.7	32.3	29.1			
	180 4 59.3	58.9	60.1	60.2	60.2	57.3	39.6718	40.1748	"
	179 59 58.8	58.8	59.6	60.0	59.5	56.8	30.0822	30.6260	"

April 27 it was found that the eye-piece had received a blow from some unknown source, somewhat injuring it and deranging its adjustments. As it was necessary to readjust the focus, the value of a revolution from the observations of April 22 is not strictly comparable with the subsequent ones. Each day's results furnish the following expressions for the number of micrometer revolutions corresponding to an arc of 150″:

Arc.	April 22.	May 6.	May 12.	May 13.	Mean.
° ′ ° ′	r.	r.	r.	r.	r.
179 55 to 179 57.5	4.7917	4.8045	4.7902	4.7839	4.7926
179 57.5 to 180 0	4.7875	4.7720	4.7863	4.7861	4.7830
180 0 to 180 2.5	4.7884	4.7820	4.7753	4.7888	4.7836
180 2.5 to 180 5	4.7809	4.7789	4.7846	4.7654	4.7774
Sum or value of 10′	19.1485	19.1374	19.1364	19.1242	19.1366

It will be seen that there is a small but pretty well marked increase in the value of a revolution as the micrometer readings increase, but the limited use of the screw already referred to is sufficient reason why it has not been taken into account. Nor has it been considered necessary to exclude the April 22 observations. The mean of all the results for observations with the new screw is 1*rev.* = 31″.353.

THE NADIR POINT.

For determination of the Nadir point a cap is provided which fits loosely over any of the eye-pieces of the telescope. Just above the eye-lens the cap has a plate of thin glass inclined at an angle of 45°. This arrangement has the decided advantage of enabling the observer to collimate without removing the eye-piece used in observation, and thereby both avoids risk of injury to the threads and prevents the otherwise frequent admission of dust by air currents, &c.

The mode of observation is as follows: The circle telescope is so pointed that when the Nadir divisions of the former are accurately under the zeros of the microscopes the images of the horizontal threads in the field of the latter may be seen at a small distance from the threads themselves. The circle microscopes are read then and at the conclusion of the reflection measures. The micrometer reading for the true Nadir, being that which corresponds to the coincidence of each thread seen directly with the image of the other seen reflected, may be obtained in three modes: 1. Three equal spaces may be formed as described when treating of the inequality of the micrometer screws. 2. Each thread may be brought into coincidence with its own image as mentioned under the same head. 3. The images may alternately be made to bisect the interval between the threads, to effect which the threads are moved over half their interval or $0^r.14$ between every two successive readings. The observers generally gave preference to the first method, but occasionally used each of the others. As the Nadir point thus determined always depends upon the same set of divisions of the circle, and is made with the same part of the micrometer-screw, it will uniformly be affected with the errors of those divisions and by any inaccuracy peculiar to that portion of the screw. During the last three months of the year, stars were observed by reflection for the purpose of ascertaining the combined amount of these errors. The difference between declinations resulting from the two modes of observation are shown in the subjoined tables, one embracing stars north and the other stars south of the zenith. In the first column of differences of each table, only those results are compared which are derived from direct and reflection observations at the same transit. The second column of differences embraces a comparison of all direct and reflection results.

ERROR OF NADIR POINT FROM DIRECT AND REFLECTION OBSERVATIONS.

TABLE I. NORTH STARS.

Name of star.	D — R	No. of obs.	D — R
	″		″
α Cassiopeæ . . .	+ 0.1	4	0.0
Polaris	0.6	3	— 0.9
ε Cassiopeæ . . .	(+ 2.6:)	1	+ 2.6:
ι Cassiopeæ . . .	+ 1.3	2	1.3
η Persei	— 0.1	2	0.4
α Persei	+ 1.0	1	+ 1.0
1 (Hev.) Draconis, S. P.	— 0.4	3	— 0.9
B. A. C. 3495, S. P.	— 0.5	1	0.4
9 (Hev.) Draconis, S. P.	+ 0.9	1	— 0.2
4 (Hev.) Draconis, S. P.	1.5	1	+ 1.3
4 Ursæ Minoris, S. P.	+ 0.1	1	+ 0.1
5 Ursæ Minoris, S. P.	. .	. .	— 1.1
50 Draconis	. .	. .	(— 5.5)
α Cygni	. .	. .	+ 2.4:
76 Draconis	+ 0.6	1	+ 0.7
B. A. C. 7299 . .	— 1.3	1	— 0.9
β Cephei	+ 0.5	2	+ 0.4
79 Draconis	— 1.4	2	— 0.8
B. A. C. 7851 . . .	+ 2.2	1	— 1.0
ι Cephei	0.8	1	+ 0.3
B. A. C. 7990 . .	1.9	1	1.8
ο Cephei	1.2	1	+ 0.8
B. A. C. 8213 . .	0.1	2	0.0
γ Cephei	+ 0.4	3	+ 0.4
τ Cassiopeæ . . .	. .	. .	(+11.7)
Mean	+ 0″.34		

TABLE II. SOUTH STARS.

Name of star.	D — R	No. of obs.	D — R
	″		″
α Andromedæ . . .	— 0.7	4	— 0.4
γ Pegasi	+ 0.2	1	— 0.1
ε Piscium	+ 1.4:	1	+ 0.4:
η Piscium	— 1.7	1	— 2.4
ν Piscium	+ 1.1	3	+ 1.1
ο Piscium	1.9	1	+ 1.9
β Arietis	+ 0.0	2	— 0.1
α Arietis	— 0.6	1	— 0.6
ξ^1 Ceti	+ 1.5	1	+ 1.5
π Arietis	+ 0.7	2	+ 0.5
ε Eridani	— 0.9	1	— 0.9
η Tauri	— 1.5	1	— 1.5
γ Geminorum . . .	+ 1.2	1	+ 1.2
1 Pegasi	2.2	1	2.2
ε Pegasi	0.5	3	0.2
α Aquarii	1.2	1	0.4
γ Aquarii	+ 1.2	1	1.2
ζ Pegasi	. .	. .	2.4
α Pegasi	. .	. .	1.7
γ Piscium	+ 1.0	2	1.0
θ Piscium	— 0.1	1	0.2
ι Piscium	+ 1.6	2	+ 1.6
ω Piscium	+ 1.1	2	— 0.1
Mean	+ 0″.51		

Thus declinations obtained from observations by reflection are 0″.34 less for stars north of the zenith, and 0″.51 less for stars south of that point, than those from observations of the same stars directly observed. Half the mean of these results, or + 0″.21, is thus obtained as a correction subtractive from direct observations above the pole, and additive to declinations of stars observed below the pole. The correction obtained for circle reading 18° 0′ 0″, and published in the volume of Observations for 1846, is —0″.187. A correction of — 0″.20 has been applied to the observed declinations of the sun, moon, and planets, as printed in pp. 351–362 of this volume, and also in the Catalogue of Stars, pp. 381–427.

METHOD OF OBSERVING.

The method of observing was the same as in preceding years, and consists essentially in transferring the subdivision of the circle from the microscopes to the micrometer eye-piece. The circle having been previously set so that the divisions nearest to the reading for the given declination were as accurately as practicable under the zero of the microscopes, the object was repeatedly placed equidistant between the parallel threads whilst it was passing across the field, and the reading of the micrometer head noted each time. The circle microscopes were read either before or after the observation, and sometimes both before and after. By this method the correction for runs of the microscope screws, as well as for their possible periodic errors, is rendered generally inappreciable, the changes of their mean reading during a night's work usually being less than 5″, while, even if used in the ordinary way, the micrometer screw would require an investigation no less complete than in the practice here adopted.

In ordinary observations of stars, five micrometer measures between the parallel threads were made as nearly as practicable at vertical threads III–VIII, or at vertical threads I, III, V, VII, and IX. For circumpolar stars only threads 1–5 were used. In observations of the sun, the circle was first set for one of the limbs and read beforehand, and while that limb approached the centre of the field, four micrometer readings were obtained at vertical threads I–IV. The circle was then quickly moved to the even reading for the other limb, another set of four measures taken at vertical threads VI–IX, and the microscopes were read afterwards. In the reduction of these observations allowance is made for the motion of the sun in declination, and for the inclination of the micrometer threads. The order of limbs observed (N.S. or S.N.) was generally reversed on successive days. When both limbs of planets were observed, the measurements were usually made at alternate transit threads, thereby securing symmetry for each with reference to the meridian.

As a general rule, the clock time of transit over the middle thread is entered in the observing-books, but has not been copied for the printed pages.

No account has been taken of the errors of circle graduation, either accidental or systematic. The probable value of the former, under the mean of six microscopes, was found in 1845–'46 to be only 0″.174,* which is less than the residual error peculiar to the telescope; and, from the smallness and convergence of the reduction of the mean of two and of three microscopes to that of six, the systematic error of division was inferred to be insensible.†

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date, the day being assumed to commence with the transit of the sun.

Column 2 contains the number for reference.

Column 3 designates the object observed. The names of stars are taken from catalogues in the following order of preference:

British Association Catalogue.
Weisse's Catalogus Stellarum ex Zonis Regiomontanis.
Lacaille's Catalogue, published by the British Association.
Oeltzen's Catalogue, Argelander Zonen Beobachtungen.
Lalande's Catalogue, published by the British Association.

For anonymous stars the approximate right ascension is always given.

Columns 4 and 5 show the number of micrometer readings and the transit threads at which these readings were made. When the number of micrometer readings does not correspond with the number of threads included within the limits stated in column 5, it is to be understood that the observations were taken at equal intervals between those limits.

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* Washington Astronomical Observations, 1845. Appendix, p. [117.]

† Ibid., p. [116.]

Columns 6 to 11 are sufficiently explained by their respective titles.

Column 12 contains the mean of the six microscope readings. When any microscope is omitted the reduction from the mean of the pair to which it belongs to the mean of the six has been found from a number of observations immediately preceding and following.* One-half the correction is subtracted from the mean of the other four microscopes to obtain the numbers given in this column. The probable difference between this result and the true mean is less than two-tenths of a second.

Column 13 contains the mean of the observed micrometer readings.

Column 14 contains the corrected mean deduced from the preceding by the application of,

1. The correction to the micrometer-screw from the table on pp. xxv–xxvi.

2. The reduction to the meridian. As the observations were generally made at the vertical threads, the reduction to the meridian is computed by the formula:

$$\Delta m = -\frac{\sin^2 h}{2r \sin 1''} \tan \delta$$

$$\text{or} \quad \Delta m = -[5.2405]\, h_0^2 \tan \delta,$$

in which h is the equatorial interval in arc, and h_0 in seconds of time, of the vertical thread at which the observation is made; and r the value of a revolution of the micrometer. Observations not made at a vertical thread have their clock times recorded, and are reduced to the meridian by the formula:

$$\Delta m = -\frac{225 \sin 1''}{4r.} h^2 \sin 2\,\delta,$$

in which h represents the observed hour angle. The following table containing the value of this correction for each thread and each degree of declination has been prepared to facilitate the work of reductions:

REDUCTIONS TO THE MERIDIAN.

Dec.	I.	II.	III.	IV.	VI.	VII.	VIII.	IX.	Mean.
°	r.	r.	r.	r.	r.	r.	r.	r.	
1	.0009	.0005	.0003	.0001	.0001	.0003	.0005	.0009	4
2	17	10	5	1	2	5	10	17	8
3	26	15	8	2	2	8	15	26	11
4	34	20	10	3	3	10	20	34	15
5	43	25	13	4	4	13	25	43	19
6	51	30	15	4	5	15	30	51	23
7	60	35	18	5	6	18	35	60	26
8	69	40	20	6	6	20	41	68	30
9	77	45	23	7	7	23	46	77	34
10	.0086	.0050	.0025	.0007	.0008	.0025	.0051	.0086	38
11	95	56	28	8	9	28	56	95	41
12	104	61	31	9	10	30	61	104	45
13	113	66	34	10	11	33	67	113	49
14	122	71	36	10	11	36	72	122	53
15	131	76	39	11	12	38	78	131	57
16	140	81	41	12	13	41	83	140	61
17	150	87	44	13	14	44	89	149	65
18	159	92	47	14	15	47	94	158	70
19	168	98	50	15	16	50	99	167	74
20	.0178	.0103	.0053	.0015	.0017	.0053	.0105	.0177	78
21	188	110	56	16	18	55	111	187	82
22	198	115	59	17	19	58	117	197	86
23	209	121	62	18	20	61	123	207	91
24	219	127	65	19	21	64	129	217	95
25	229	133	68	20	22	67	135	227	100
26	240	140	71	21	23	70	141	238	105
27	250	146	74	22	24	73	147	248	110
28	261	153	77	23	25	76	154	259	115
29	272	160	81	24	26	79	160	270	120

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* About one-half of each division between 56° 55′ and 57° 15′ is almost obliterated, and other divisions as far as 57° 50′ are very faint. So far as I can learn, the injury was done when the instrument was dismounted to clean in 1857.

Dec.	I.	II.	III.	IV.	VI.	VII.	VIII.	IX.	Mean.
°	r.	r.	r.	r.	r.	r.	r.	r.	
30	.0283	.0166	.0084	.0025	.0027	.0083	.0167	.0281	125
31	294	173	87	26	28	86	174	293	130
32	306	180	90	27	29	89	181	304	135
33	318	187	94	28	30	93	188	316	141
34	330	194	97	29	31	96	195	328	146
35	342	201	101	30	32	100	203	340	152
36	355	208	105	31	34	104	211	353	157
37	369	216	109	32	35	108	218	366	162
38	382	224	113	33	36	112	226	380	168
39	396	232	117	35	37	116	234	394	174
40	.0411	.0240	.0122	.0036	.0039	.0120	.0243	.0408	180
41	426	248	126	37	40	125	252	423	186
42	442	257	130	38	41	129	261	439	193
43	458	266	135	40	43	134	270	455	200
44	473	276	140	41	44	139	280	470	207
45	489	286	145	43	46	144	290	486	214

Dec.	III.	IV.	VI.	VII.	Mean.	Dec.	III.	IV.	VI.	VII.	Mean.
°	r.	r.	r.	r.		°	r.	r.	r.	r.	
45	.0145	.0143	.0046	.0144	.0076	68	.0358	.0106	.0114	.0356	.0187
46	150	44	48	149	78	69	377	111	120	375	197
47	155	46	49	154	81	70	398	117	127	396	208
48	161	47	51	160	84	71	420	124	134	418	220
49	166	49	53	165	87	72	445	131	142	443	233
50	172	51	55	171	90	73	472	140	151	470	247
51	178	53	57	177	93	74	503	149	161	500	263
52	185	54	59	184	96	75	538	159	172	535	281
53	192	56	61	191	100	76	579	171	185	576	302
54	199	58	64	198	104	77	626	185	199	623	327
55	206	61	66	205	108	78	680	200	216	677	355
56	214	63	69	213	112	79	743	219	237	739	388
57	222	66	71	221	116	80	820	242	261	816	428
58	231	68	74	230	121	80½	865	255	276	860	
59	240	71	77	239	126	81	914	269	292	909	
60	250	74	80	249	131	½	968	285	309	963	
61	260	77	83	259	136	82	.1030	303	329	.1024	
62	272	80	86	271	142	½		323	351		
63	284	83	90	283	148	83		347	377		
64	297	87	94	296	155	½		374	407		
65	310	91	98	309	162	84		406	441		
66	325	96	103	323	170	½		443	481		
67	341	101	108	339	178	85		487	529		

Dec.	1.	2.	4.	5.	Mean.
° ′	r.	r.	r.	r.	
80	.0011	.0003	.0003	.0011	.0006
81	12	3	3	13	6
82	14	3	3	15	7
83	16	4	4	17	8
84	18	4	5	20	9
85	22	5	6	24	.0011
86	27	6	7	30	14
87	.0036	.0009	.0009	.0040	.0019
10	38	9	10	42	20
20	41	10	11	45	21
30	44	10	11	48	22
40	47	11	12	51	24
50	50	12	13	55	26
88	.0053	.0013	.0014	.0060	.0028
10	59	14	15	65	31
20	65	15	17	72	34
30	73	17	19	80	38
40	82	19	21	90	42
50	93	22	24	103	48
89	.0109	.0026	.0028	.0120	.0057
5	119	28	31	131	
10	131	31	34	144	
15	146	35	38	160	

3. The correction of unsymmetrical observations for inclination of the micrometer threads to the horizon obtained from the table on p. xxviii.

4. The correction of unsymmetrical observations of the Sun, Moon, or Planets, on account of motion in declination computed from the formula:

$$\Delta m = [4.9475]\ h \ \text{sec.}\ \delta\ D_t\ \delta,$$

in which h represents the hour angle in seconds of time, and $D_t\ \delta$ the change of declination in seconds of arc during a sidereal hour. In the reduction of observations of the Moon, its motion whilst passing an hour of terrestrial longitude was substituted for $D_t\ \delta$, the correction for parallax being omitted.

5. Since the introduction of the parallel micrometer threads, the nadir point has always been referred to the imaginary line equidistant from each. A correction equal to half the distance of the threads, or $0^r.1458 = 4''.57$, is applied to observations made with either thread, and is subtracted from readings made with thread *A*, and added to those made with thread *B*.

Columns 15, 16, and 17 contain the readings of the (Newman) barometer, its attached thermometer, and of the external thermometer. By comparison with the standard barometer, the necessary correction of these readings is found to be only — 0.001 inch, involving a correction of the log. refraction of — .00001. The readings of the attached thermometer are assumed to be correct. The external thermometer is a standard by Troughton & Simms, and is the one designated No. 3 in the Appendix to Washington Observations for 1845, page 54. It is placed outside of the north aperture, and is held between two horizontal supports, which carry it several inches beyond the wall. The scale is read by help of a small sextant telescope attached to the window frame. From the table just mentioned the following corrections to scale readings are quoted, and the corresponding corrections of the log. refraction are annexed:

CORRECTIONS OF THERMOMETER.

Ther. scale.	Corr.	Δ log. ref.	Ther. scale.	Corr.	Δ log. ref.
°	°		°	°	
30	— 0.04	+ .00004	66	+ 0.20	— .00016
32	.06	5	68	.25	21
34	.11	10	70	.22	18
36	.08	7	72	.12	10
38	.05	4	74	+ .03	— 3
40	.02	2	76	— .01	+ 1
42	.01	1	78	.04	3
44	.00	0	80	.04	3
46	.01	1	82	.01	1
48	.03	3	84	.00	0
50	.04	3	86	.06	5
52	.03	3	88	.12	10
54	.01	1	90	.14	11
56	.01	1	92	.14	11
58	— .03	+ 3	94	.14	11
60	.00	0	96	.13	11
62	+ .05	— 4	98	.12	10
64	+ 0.12	— .00010	100	— 0.12	+ .00010

Column 18 contains the adopted value for the micrometer zero. It is deduced from all the nadir readings of the day or night, either by simply taking the arithmetical mean, or, where sufficient evidence of actual change was shown, by assuming the variation to have been proportional to the time. The general changes in the value of this quantity, where no alterations were made in the adjustment of the instrument, are partly due to the variations of the temperature of the pier, and are partly connected with the deviations of the instrument from meridian adjustment.

Column 19, entitled "Correction for micrometer," contains the micrometer equivalent, or the difference between the quantities in columns 14 and 18 converted into arc. If the former quantities are denoted by m and the latter by m_0, the values in this column will be given by the formula:

$$\text{Corr.} = (m_0 - m).\ r.$$

Column 20 contains, as "correction for object," the sum of the following quantities:

1. The correction for refraction corresponding to the observed zenith distance and barometer and thermometer readings. This quantity is computed from Bessel's tables, as given in an expanded form in the Appendix to the Washington Observations for 1845. The observed zenith distance is obtained from the circle reading by applying the micrometer equivalent from the preceding column.

2. The correction for parallax for observations of the Sun, Moon, and Planets, computed for the first and last, by the formula:

$$p = \pi .\ \sin\,(z' - 11'.2);$$

and for the moon:

$$\sin p' = \sin \pi .\ \sin\,(z' - 11'\ 14''.54).\ [9.9994302,]$$

$$\text{or}\quad p' = \pi .\ \sin\,(z' - 11'\ 14''.54).\ [9.9994302].\ \frac{\text{sine}\ \pi}{\text{arc}\ \pi}.\frac{\text{arc}\ p'}{\text{sine}\ p'}.$$

$$\text{and}\qquad p = p' \mp \tfrac{1}{2}\,(p \mp s)\ \sin p\ \sin s,$$

the upper signs corresponding to observations of the upper limb, and *vice versa*. The quantities $\frac{\text{sine}\ \pi}{\text{arc}\ \pi}$ and $\frac{\text{arc}\ p}{\text{sine}\ p}$ are given in tables IX and X, and the correction of p' in the last formula is given in table XI of the Appendix to the Washington Observations for 1845.

In these formulas:

z' represents the observed zenith distance, corrected for refraction.

π, the equatorial horizontal parallax, as given in the American Nautical Almanac.

s, the semidiameter of the object.

p, the required correction for parallax.

For the superior planets it is convenient to tabulate this correction for equal intervals of time, and thence obtain values for the special dates by interpolation.

The following table has been computed for observations of the Sun, and shows the correction for parallax applicable to each limb, and for every tenth day of the year. Until Encke's adopted value (8''.5776) is modified, it will serve for any year without sensible change.

CORRECTION FOR PARALLAX OF SUN.

Date.	North limb.	South limb.	Date.	North limb.	South limb.
	"	"		"	"
Jan. 1	7.66	7.70	July 10	2.36	2.43
11	7.57	7.61	20	2.58	2.65
21	7.42	7.46	30	2.89	2.96
31	7.20	7.24	Aug. 9	3.26	3.33
Feb. 10	6.91	6.96	19	3.68	3.75
20	6.57	6.62	29	4.14	4.21
Mar. 2	6.17	6.23	Sept. 8	4.62	4.69
12	5.74	5.80	18	5.10	5.16
22	5.27	5.33	28	5.57	5.63
April 1	4.78	4.84	Oct. 8	6.02	6.07
11	4.29	4.35	18	6.42	6.47
21	3.81	3.88	28	6.78	6.83
May 1	3.37	3.44	Nov. 7	7.08	7.13
11	2.98	3.05	17	7.33	7.37
21	2.65	2.72	27	7.51	7.55
31	2.40	2.48	Dec. 7	7.63	7.67
June 10	2.25	2.32	17	7.69	7.73
20	2.18	2.26	27	7.70	7.72
30	3.22	2.30			

3. The correction for semidiameter when only one limb has been observed. For the sun and planets this correction is taken immediately from the Nautical Almanac; for the Moon it has been computed from the value of π by assuming the ratio given by Burchardt, increased by $\frac{1}{500}$ part.* This gives

$$\text{sine}\ s = \sin \pi .\ [9.4358746],$$

$$\text{or}\qquad s = \pi .\ [9.4358746].\ \frac{\sin \pi}{\text{arc}\ \pi}.\ \frac{\text{arc}\ s}{\text{sine}\ s}.$$

4. The correction for defective illumination of the Moon, Mercury, or Venus. If θ denote the angle which the line of the cusps makes with the meridian, i the angle between the Sun and the point of observation as seen at the object, and s its semidiameter, then when the planet appears as a crescent:

$$\delta\, s = s \text{ versin } \theta,$$

$$\sin \theta' = \sin \theta \sin i;$$

when the planet is gibbous:

$$\delta\, s' = s \text{ versin } \theta'.$$

The numerical values of this correction for Observations of the Moon are stated in the marginal notes For the planet Venus they were taken from the following table:

	″		″
May 31	+ 0.04	Aug. 9	+ 1.58
June 10	.13	19	1.97
20	.28	29	2.60
30	.46	Sept. 8	3.95
July 10	.68	18	+ 10.73
20	0.93		
30	+ 1.22		

From September 7 until October 7 the cusp of Venus was so slender that the observations of it are not reliable, and the measured semidiameter has not been used in obtaining the declination of the centre. From the latter date to the end of the year the more rigorous method was adopted of multiplying the apparent observed diameter by the factor $\frac{1}{1 + \cos \theta}$ or $\frac{1}{1 + \cos \theta'}$ to obtain the semidiameter. The logarithms of the computed factor (f') will be found in the annexed tables:

VENUS.				MERCURY.	
Date.	Log. f'.	Date.	Log. f'.	Date.	Log. f'.
1863.		1863.		1863.	
Sept. 18	9.7888	Oct. 29	9.7132	Oct. 19	9.724
20	.8101	Nov. 8	.7166	20	.724
22	.8412	18	.7181	27	.723
24[1]	.9049	28	.7181		
25	.9893	Dec. 8	.7162		
27	.8625	11	.7131		
29	.7720	21	.7104		
Oct. 9	.6992	31	.7066		
19	.7076				

The single horizontal line indicates when the line of the cusps became horizontal, and the parallel lines when the visible form of the planet changes to gibbous. For the last three dates of Venus and all those of Mercury the values of θ and θ' were obtained by aid of a celestial globe in the manner detailed in the Washington Observations for 1847.

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* Peirce. Tables of the Moon. Introduction.

Column 21 contains the corrected circle reading. This is the sum of the quantities in columns 12, 19, and 20, and represents the true geocentric zenith distance of the object observed. When only one limb of a body was observed, or used for declination, the zenith distance in this column is that of the centre. When both limbs are observed, it is that of the limbs themselves.

Column 22 contains the observed declination. It is obtained for stars above the pole by subtracting the quantity in the last column from the assumed latitude 38° 53′ 39″.25; and for stars below the pole by subtracting 218° 53′ 39″.25 from the same quantity. When both limbs of an object have been observed, the mean result only is entered in this column, and the half difference of the corrected readings is inserted in the margin as the observed semidiameter.

Column 23 contains the corrections necessary for reduction of the fixed stars to the mean declination for the commencement of the year 1860. They were computed by Bessel's formulas, with constants prepared from the logarithms A, B, C, and D of the American Ephemeris and Nautical Almanac, and, in addition to the terms in the logs. referred to, they include also those depending on twice the Moon's mean longitude. Corrections for proper motion have not been applied to any star.

Column 24 contains the initials of the observer's names:

H. denoting Prof. J. S. Hubbard.
He. " " F. G. Hesse.
N. " " S. Newcomb.
Ha. " " W. Harkness.
R. " Mr. J. A. Rogers.

The readings of the pier thermometers are given at the foot of the page. There are five of them, four attached to the face of the pier near the microscopes, having similar letters, and the fifth is inserted in a hole drilled in the top. Generally they are read at every determination of the nadir point, and they constitute materials for an investigation of the relation of the variations of the latter to the changes of temperature.

THE PRIME VERTICAL TRANSIT INSTRUMENT.

One observation of η Lyræ was made with this instrument in 1863; all the others were of α Lyræ. The times of transit were noted by eye and ear with the clock of the south wing.

The regrinding of the pivots was mentioned in the introduction to the volume of observations for 1861. Although the effect of inequality in them is eliminated by the method of observing, and the level error is not only always determined at the actual time of observation, but also for those points of the pivots upon which the instrument is then resting, it was considered of interest to test the accuracy of Mr. Würdemann's work after the instrument was again mounted. For this purpose a set of level readings was taken for each tenth degree of zenith distance, and in each position of the telescope north and south of the pier. A discussion of these readings gave the general numerical expression of the level error at the middle time of reading,

$$\text{Tel. N. } b = -\,1d.245 + 0d.0105.\,t + 0d.064 \sin z - 0d.074 \cos z,$$

$$\text{Tel. S. } b = -\,1d.719 + 0d.0163.\,t + 0d.015 \sin z + 0d.047 \cos z,$$

in which z denotes the zenith distance, and t the interval of time between each reading and the middle time. The average difference between the pivots is therefore only $0d.263$, or a little more than one-fourth of a second, and in every case the deviations from cylindrical figure practically insensible.

The value of one division of the level tube was approximately determined by measuring with the collimating eye-piece and micrometer screw of the telescope the motion of the reflected image of the middle vertical thread of the telescope under arbitrary changes in the level of the axis. Though susceptible of accuracy, this method is scarcely sufficient for the minute and thorough investigation necessary in the present case, and it is intended to carry out a more elaborate examination as soon as a special apparatus is ready for use which is in course of construction by the machinist. The result of the determination from the specified experiment is:

Pos. of centre of bubble.	Value of one division.
	″
+ 19d	0.948
+ 10	1.026
0	0.973
— 10	0.993
— 20	0.980

The value adopted for the reduction of observations is $1d.$ = one second of arc.

The diaphragm contains one vertical and two close horizontal stationary threads, which cross at the centre of the field. On each side of the vertical thread, and at nearly equal distances from it, there is a system consisting of seven close threads also fixed. These are used in observing transits. There is also a vertical thread which is movable by a micrometer screw, and the value of whose revolution has been ascertained equal to $25''.969$.

Observations are made as follows: The telescope having been directed to the place of the star, from four to six level readings are noted before transit over the east vertical, the level tube being reversed upon the axis after each reading. As soon as the instants of transit over the seven threads first reached by the star have been recorded, the instrument is reversed, and the transits over the same threads, now upon the opposite side of the field, are noted in reverse order. The level is again read with precaution as before. Upon arrival of the star near the west vertical, the same processes of level readings, transits, and reversal of instrument are repeated, the telescope returning to its original side of the pier at this second reversal.

In observing α Lyræ, the lateral motion of the star is so slow that it is practicable to note a part of the level indications between the transits over successive threads; and, therefore, as one or two readings are made beforehand, at least three obtained during the star's passage, and the remaining number before reversal, the observation for level error is strictly simultaneous with that of transit, and the readings recorded are for precisely those portions of the pivots which are used.

In the reduction of the observations the transits over each thread have been treated separately, and in accordance with the method and formulas given by Struve.* These formulas are as follows:

Representing by δ and φ the declination of the star and latitude of the Observatory; by t and t_1 the observed times of the star's transit over a given thread in the east vertical before and after reversal of the instrument, and by t' and t'_1, the corresponding times at the west vertical, and making

$$s = \tfrac{1}{4} \left[(t'_1 - t) + (t' - t_1) \right];$$
$$u = \tfrac{1}{4} \left[(t'_1 - t) - (t' - t_1) \right];$$

we have

$$\tan \delta = \tan \varphi \cos s \cos u.$$

The values of $\cos s$ and $\cos u$ are computed separately for each thread, and the mean result multiplied by the constant $\tan \varphi$. The Prime Vertical Transit Instrument being forty-five feet south of the centre of the Mural Circle pier, its latitude has been assumed to be

$$38^\circ\ 53'\ 38''.80.$$

The correction of observations for level is obtained by the formula

$$d\,\delta = b \sin 2\,\delta \operatorname{cosec} 2\,\varphi,$$

or for α Lyræ $= b\ 0.984$.

The intervals of the threads, or their collimation, if either be desired, may be computed by the formula:

$$\sin \text{int.} = \cos \delta \sin \varphi \sin s \sin u.$$

The azimuthal error of the axis is obtained by comparing the mean of the observed transit east and west, corrected for clock error, with the tabular right ascension of the star. The corresponding correction of declination for such azimuthal error will be

$$d'\,\delta = \tfrac{1}{4}\,a^2 \sin 1'' \sin 2\,\delta \operatorname{cosec} \varphi.$$

In the printed observations the headings of the several columns sufficiently indicate the quantities therein shown, and they therefore require no special explanation, except that in the reduction to 1860.0 the daily change of declination of the star arising from precession and proper motion, is assumed to be

$$+\ 0''.008455 + 0''.0000079\ (t - 1860,)$$

which corresponds to the annual proper motion found by Peters,

$$0''.2792.$$

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* Astr. Nach., xx, p. 210.

EQUATORIAL INSTRUMENT.

This instrument was principally employed during the year in observations of Asteroids, Comets, and such occultations and eclipses as were visible at Washington. It was also used in measuring distances and angles of positions of double stars, and in determining the places of small stars in the Pleiades with a view to more perfect knowledge of the whole of that important group.

The objects are specifically as follows: Of Asteroids near opposition—

⑨ Metis.
⑭ Irene.
⑱ Melpomene.
㊲ Fides.
㊴ Lætitia.
㊽ Doris.
㊾ Pales.
(51) Nemausa.
(55) Pandora.
(60) Echo.
(64) Angelina.
(79) Eurynome.

Comets 1863, II, and 1863, IV.

Pleiades cluster, twenty-six stars; some of which have been determined by from twenty to thirty comparisons.

Double stars, fifty-nine; selected principally from the Dorpat Catalogue, and in southern declination.

Occultations by the moon; nineteen.

The Micrometer, with which the observations were made, has five threads used as transit threads in determining differences of R. A., and a like number perpendicular thereto for differences of Dec. The former are designated by the letters a, A, B, C, c, the first named being on the extreme west when the telescope points south and the micrometer-head is downward. There was no change in these threads until June 21, and their equatorial intervals, as determined in 1862, were as follows:

	s.
B — a	12.19
B — A	8.38
C — B	8.42
c — B	11.99

For the purpose of measuring angles of position with greater accuracy, the thread B was removed at the date just mentioned, and two close parallel threads substituted for it. The interval between the pair was 2*s*.2, the other threads remaining as before. As the double thread arrangement did not afford the expected satisfaction, a single central one was inserted September 19. The equatorial intervals subsequent to that date have been—

	s.
B — a	12.19
B — A	8.40
C — B	8.31
c — B	12.36

Beginning with the one nearest to the head of the micrometer-screw, the threads for differences of declination are numbered 1 to 5 inclusive. Their intervals throughout the year in revolutions of the micrometer-head have been

rev.
$2 - 1 = 17.131$
$3 - 1 = 29.916$
$4 - 1 = 42.993$
$5 - 1 = 60.001$

The focal length of the object-glass having been slightly increased when it was reground by Messrs. Alvan Clark & Sons, as mentioned in the volume for 1862, it became necessary to redetermine the value of a revolution of the micrometer-screw. For this purpose repeated transits were observed of δ Ursæ Minoris, 1 Draconis, and Radcliffe 2116. The resulting value of a revolution = 15″.3374 has been used in the reductions and probably will not be sensibly changed by future observations.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date and initial letter of the observer's name, (F. for Mr. Ferguson, and H. for Professor Hall;) column 2, the names of the objects compared; columns 3, 4, and 5 the seconds of the transits; column 6, the mean of these transits, with the hour and minute prefixed; column 7, the micrometer reading; columns 8 and 9, the observed difference in Right Ascension and Declination, the first expressed in minutes and seconds, the second in revolutions and decimals; column 10, or the remainder of the page contains: The correction for chronometer; the apparent place of comparison star at the time of observation; the mean of the observed differences of Right Ascension and Declination between the object compared and the star of comparison; and the corrections for differential refraction (△ ρ) and for parallax (*p*.)

Where a mean time chronometer has been used in the observations, there is added a small correction (△ *t*) to reduce the mean to the sidereal interval.

The tabulated results (pages 363–372) show the mean time of the observations at Washington, the observed place of the body corrected for refraction and parallax, and the mean places of the stars of comparison for 1860, together with the authorities from whence they were derived.

The lists of observed double stars and of occultations of stars by the Moon, (pages 279–284,) are explained on the pages which contain them.

OBSERVED RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS OF THE SUN, MOON, AND PLANETS.

The results from observations of these bodies with the Transit Instrument and the Mural Circle will be found on pages 353 to 362, inclusive. The mean times of the transit of the centres there given have been taken without change from the American Ephemeris in such cases as it was available, but for the minor planets they have been interpolated from the supplements to the Nautical Almanac and the Berlin Jahrbuch.

The columns headed "Limb" indicate the limb observed, blanks implying either that the centre or that both limbs were noted. When the centre was observed, the right ascension has been transcribed without change from the proper columns in pages 1–135. If only one limb had been observed, the right ascension of the centre was obtained by applying to the observed right ascension of the limb the sidereal time of transit of the semi-diameter.

When only one limb of the Sun was observed, the value given in the ephemeris was corrected in the manner referred to already in explanation of the printed transit observations.

Sometimes both limbs of the Moon or planets were observed, one of them being defective. For these cases a correction for defective illumination was computed to complete the time of passage of the semi-diameter from the formulas:

$$\text{Sin}\ \chi = \frac{\text{R}}{\text{R}^1} \cos \text{D} \sin (a^1 - \text{A}),$$

$$\triangle\ a = \tfrac{1}{15}\, s \text{ ver sin } \chi \sec \delta;$$

in which a^1 and A represent the right ascensions of the planet and Sun respectively; δ and D the declination of the same objects; R and R^1 the heliocentric distances of the Earth and planet respectively; s the apparent semi-diameter of the Moon or planet at the time of the observation; for the Moon we may adopt $\text{R} = \text{R}^1$. The value of sin χ computed by the above formula will be positive or negative as the 2d or 1st limb is defective.

The addition of a colon (:) to any result indicates that from some cause, mentioned in the original observation, it is less reliable than usual.

To all Declinations from observations with the Mural Circle a constant correction — 0″.20 has been applied for error of Nadir determination deduced, as already stated, from observations by reflection.

APPENDIX A.

SOLAR PARALLAX;

FROM

OBSERVATIONS OF THE PLANET MARS,

MADE

NEAR THE OPPOSITION, 1862.

U.S. Naval Observatory

APPENDIX A.

SOLAR PARALLAX.

During the month of March, 1862, a circular, of which the following is a copy, was forwarded to all known Observatories.

OPPOSITION OF MARS.

The co-operation of astronomers is invited in a series of observation upon the planet Mars, near the opposition of the present year. Differential measures, with stars designated in the accompanying Ephemeris, will be made at the United States Naval Observatory from August 27 to November 7, 1862. They will be commenced at one hour before the transit of the planet over the meridian of Washington, and be continued during two hours, the measures being repeated as frequently and as rapidly as is consistent with the utmost care. The comparisons will be confined exclusively to the star selected for the night, and it will be referred to the north and south limbs of the planet at alternate measures—the time at which the planet's limb is observed being noted to the nearest tenth of a second. Both objects will also be observed with the meridian instruments, and their difference of declination will be measured with the micrometer-screw of the circle telescope.

Astronomers who make these observations are most respectfully requested to forward a copy of them to this establishment as soon thereafter as is practicable, and to transmit, at the same time, a statement respecting the instruments used, together with any information which may influence a discussion of the results.

In preparing the Ephemeris, whenever suitable ones could be obtained, stars were selected from published catalogues, the criterion of availability being a difference of declination not to exceed 4′. For September 17, it was necessary to take a more distant star. The places of those to which numbers only are given (1 to 11, inclusive,) were derived from special observations made with the Washington equatorial. To facilitate recognition of the comparison star selected for each night, all the stars contained in accessible catalogues, and star charts which lie near the path of the planet, have been inserted on a map accompanying the Ephemeris.

A copy of this last, with the map, will be sent to every Observatory, by mail. As some of the copies may not reach their destination, extra numbers will be forwarded to the Secretary Royal Astronomical Society, London, and to Dr. C. A. F. Peters, at Altona; either of whom will furnish them on application.

EPHEMERIS OF STARS TO BE OBSERVED WITH MARS NEAR THE OPPOSITION OF THE PLANET, 1862.

Date.	Object.	Mag.	α	δ
1862.			h. m. s.	° ′ ″
Aug. 27	Mars	. .	1 17 30	+ 3 5 43
	Weisse I, 335	9	20 27	9 43
28	Mars	. .	1 17 45	3 6 48
	Weisse I, 335	9	20 27	9 43
29	Mars	. .	1 17 58	3 7 37
	Weisse I, 335	9	20 27	9 43
30	Mars	. .	1 18 6	3 8 12
	Weisse I, 335	9	20 27	9 43
31	Mars	. .	1 18 12	3 8 32
	Weisse I, 335	9	20 27	9 43

Date.	Object.	Mag.	α	δ
1862.			h. m. s.	° ′ ″
Sept. 1	Mars	. .	1 18 14	+ 3 8 37
	Weisse I, 335	9	20 27	9 43
2	Mars	. .	1 18 13	3 8 28
	Weisse I, 335	9	20 27	9 43
3	Mars	. .	1 18 9	3 8 5
	Weisse I, 335	9	20 27	9 43
4	Mars	. .	1 18 2	3 7 27
	Weisse I, 335	9	20 27	9 43
5	Mars	. .	1 17 51	3 6 36
	Weisse I, 330	8.9	20 9	5 26
6	Mars	. .	1 17 37	3 5 30
	Weisse I, 330	8.9	20 9	5 26
7	Mars	. .	1 17 19	3 4 12
	Weisse I, 330	8.9	20 9	5 26
8	Mars	. .	1 16 58	3 2 39
	Weisse I, 330	8.9	20 9	5 26
9	(* 1)	9	1 15 37	3 3 55
	Mars	. .	16 35	0 54
10	(* 2)	9.10	1 12 38	2 58 47
	Mars	. .	16 7	58 55
11	(* 2)	9.10	1 12 38	2 58 47
	Mars	. .	15 37	56 45
12	(* 2)	9.10	1 12 38	2 58 47
	Mars	. .	15 4	54 22
13	(* 3)	9.10	1 12 28	2 49 50
	Mars	. .	14 27	51 48
14	Mars	. .	1 13 48	2 49 2
	Weisse I, 229	9	15 11	47 49
15	Mars	. .	1 13 5	2 46 6
	Weisse I, 229	9	15 11	47 49
16	Mars	. .	1 12 19	2 42 59
	Weisse I, 229	9	15 11	47 49
17	Mars	. .	1 11 31	2 39 43
	B. A. C. 397	7.8	12 16	33 48
18	Mars	. .	1 10 40	2 36 18
	B. A. C. 397	7.8	12 16	33 48
19	Mars	. .	1 9 46	2 32 45
	B. A. C. 397	7.8	12 16	33 48
20	Mars	. .	1 8 50	2 29 4
	B. A. C. 397	7.8	12 16	33 48
21	Mars	. .	1 7 51	2 25 16
	(* 4)	9	10 17	22 36
22	Mars	. .	1 6 51	2 21 23
	(* 4)	9	10 17	22 36
23	Weisse I, 20	9	1 3 7	2 15 40
	Mars	. .	5 48	17 25
24	Weisse I, 20	9	1 3 7	2 15 40
	Mars	. .	4 43	13 23
25	Mars	. .	1 3 36	2 9 18
	(* 5)	9	6 5	11 50
26	(* 6)	9	1 2 4	+ 2 2 20
	Mars	. .	2 28	5 11

Date.	Object.	Mag.	α	δ
1862.			h. m. s.	° ′ ″
Sept. 27	Mars	. .	1 1 19	+ 2 1 2
	(* 6)	9	2 4	2 20
28	Weisse 0, 1031	9	0 59 0	1 53 35
	Mars	. .	1 0 8	56 34
29	Mars	. .	0 58 57	1 52 47
	Weisse 0, 1031	9	59 0	53 35
30	Mars	. .	0 57 44	1 48 41
	Weisse 0, 1023	9	58 36	44 11
Oct. 1	Mars	. .	0 56 31	1 44 39
	Weisse 0, 1023	9	58 36	44 11
2	Mars	. .	0 55 17	1 40 39
	Weisse 0, 973	9	55 50	36 10
3	Mars	. .	0 54 4	1 36 44
	Weisse 0, 973	9	55 50	36 10
4	Mars	. .	0 52 50	1 32 54
	Weisse 0, 973	9	55 50	36 10
5	(* 7)	9	0 48 34	1 32 19
	Mars	. .	51 36	29 10
6	Mars	. .	0 50 23	1 25 34
	Weisse 0, 871	8.9	50 36	20 46
7	Mars	. .	0 49 10	1 22 5
	Weisse 0, 871	8.9	50 36	20 46
8	Mars	. .	0 47 58	1 18 45
	Weisse 0, 871	8.9	50 36	20 46
9	Mars	. .	0 46 46	1 15 34
	(* 8)	9	49 38	17 0
10	Mars	. .	0 45 36	1 12 33
	Weisse 0, 806	9	46 34	9 38
11	Mars	. .	0 44 26	1 9 42
	Weisse 0, 806	9	46 34	9 38
12	Mars	. .	0 43 18	1 7 3
	Weisse 0, 806	9	46 34	9 38
13	Weisse 0, 649	8	0 38 0	1 3 20
	Mars	. .	42 11	4 35
14	Weisse 0, 649	8	0 38 0	1 3 20
	Mars	. .	41 6	2 10
15	Weisse 0, 649	8	0 38 0	1 3 20
	Mars	. .	40 3	0 19
16	Lalande 1123	9	0 35 35	0 56 24
	Mars	. .	39 2	58 31
17	Lalande 1123	9	0 35 35	0 56 24
	Mars	. .	38 2	56 57
18	Lalande 1123	9	0 35 35	0 56 24
	Mars	. .	37 5	55 38
19	Lalande 1123	9	0 35 35	0 56 24
	Mars	. .	36 10	54 35
20	Mars	. .	0 35 17	0 53 47
	Lalande 1123	9	35 35	56 24
21	Mars	. .	0 34 27	0 53 15
	Lalande 1123	. .	35 35	56 24
22	Mars	. .	0 33 40	+ 0 52 59
	Lalande 1123	9	35 35	56 24

Date.	Object.	Mag.	α	δ
1862.			h. m. s.	° ′ ″
Oct. 23	Mars	. .	0 32 55	+ 0 52 59
	Lalande 1123	9	35 35	56 24
24	Mars	. .	0 32 13	0 53 17
	Lalande 1123	9	35 35	56 24
25	Mars	. .	0 31 34	0 53 51
	Lalande 1123	9	35 35	56 24
26	Mars	. .	0 30 57	0 54 43
	Lalande 1123	9	35 35	56 24
27	Mars	. .	0 30 24	0 55 51
	Lalande 1097	8.9	34 30	59 34
28	Mars	. .	0 29 53	0 57 17
	Lalande 1097	8.9	34 30	59 34
29	Mars	. .	0 29 26	0 58 59
	Lalande 1097	8.9	34 30	59 34
30	Mars	. .	0 29 2	1 0 59
	(* 9)	9	29 40	5 34
31	Mars	. .	0 28 40	1 3 15
	(* 9)	9	29 40	5 34
Nov. 1	Mars	. .	0 28 22	1 5 48
	(* 9)	9	29 40	5 34
2	Mars	. .	0 28 7	1 8 38
	(* 9)	9	29 40	5 34
3	(* 10)	9.10	0 27 44	1 10 0
	Mars	. .	27 54	11 44
4	(* 11)	9.10	0 26 52	1 16 40
	Mars	. .	27 45	15 6
5	Weisse 0, 393	9	0 24 21	1 22 28
	Mars	. .	27 39	18 44
6	Weisse 0, 393	9	0 24 21	1 22 28
	Mars	. .	27 36	22 38
7	Weisse 0, 420	9	0 25 34	+ 1 23 53
	Mars	. .	27 36	26 47

Subsequently the co-operation of this observatory in a series of meridian declination measures of the planet and certain preselected stars was asked by Dr. Winnecke, of the Pulkova Observatory. An account of the mode of observation prescribed by him will be found in "*Bulletin de l'Académie Impériale des Sciences de St. Petersbourg,*" *tom.* v., *pag.* 213 *ff.* It will again be referred to.

As the observations desired by Dr. Winnecke would not absolutely interfere with the differential meridian measures, for which the circular pledged the observatory, its concurrence was promptly and cordially promised, and the hope was entertained that his method would afford a result commanding the confidence of astronomers.

The Washington Observations in detail, whether made with the Equatorial or the Mural Circle, will be found under their appropriate heads in the volume for 1862; only such data therefrom will be repeated in these pages as are necessary for combination with corresponding observations forwarded to us, and serve as the bases of computations.

The observations received are:

1. From Dr. C. W. Moesta, Director of the National Observatory at Santiago de Chile. *Observaciones meridianas i micrométricas relativas al planeta Marte al tiempo de su opposicion en* 1862, *verificadas en el Observatorio Nacional de Santiago de Chile. Santiago,* 1863.

2. From Dr. H. Schultz, Second Astronomer of the University and Observer at the Observatory at Upsala. *Refractors—Beobachtungen der K. Universetäts-Sternwarte in Upsala. Upsala*, 1864.
3. From Dr. F. Kaiser, Director of the Observatory at Leyden. *Micrometer measures of the difference between the planet Mars near the opposition of* 1862 *and the comparison stars, as proposed by Commander Gillis.* MS.
4. From Professor G. W. Hough, Director of the Dudley Observatory, at Albany. *Mars Observations at the Dudley Observatory*, 1862. MS.

The observations specified under 1 and 2, having been published at length, are regarded as accessible to astronomers, and necessary corresponding data only will be reproduced. Those made at Leyden with the Equatorial—No. 3 above, and transmitted in MS. by Dr. Kaiser—have been withheld at his request, Professor Hough's measures with the Albany Meridian Circle and the details of observation and reduction courteously supplied by him are as follows:

MARS OBSERVATIONS AT THE DUDLEY OBSERVATORY, 1862.

"The Mars Observations were made with the Olcott Meridian Circle, using the declinometer for the observations on the planet itself. During the passage of Mars we placed the micrometer thread alternately tangent to the upper and lower limbs of the planet, reading from our declinometer scale the seconds and fractions; the limit of error for a single reading being about two-tenths of a second. We always made at least three bisections of each limb, and sometimes six, the average being about four. Immediately before and after the transit of the planet the declinometer scale was compared with the circle; the difference between the two comparisons being usually within the limits of reading, and rarely amounting to $0''.5$. In every case we have used the mean of all, corrected for the runs of the scale, which have been assumed constant throughout the whole series. The comparisons were generally made at a point on the scale corresponding to the reading of Mars' centre, thereby eliminating the error of runs entirely.

"At the time of these observations the declinometer reading telescope was not mounted as firmly as it should have been, and to this cause we attribute the greatest source of error. It was mounted on a stand connected with the east pier of the Olcott Meridian Circle by means of ¾-inch iron rods about 10 inches in length. It was found on pressing with some force (*e g.* 10 lbs.) on this frame, that the position of the reading telescope could be changed on the scale $2''$ or $3''$, and any greater or less amount of pressure would change the position in a proportionate ratio.

"It may be proper to remark, that, after applying the pressure to the reading telescope support and causing it to change the scale reading, on removing the pressure it would take up its original position, the limit from many trials being $0''.5$. In case, however, the support was not disturbed during the time of observation this source of error would not be appreciable. We were always particular that this should be the case; still it may at times have been accidentally disturbed, but we find no record of this kind in the Mars series.

"This trouble has since been removed by bolting a solid oak block against the surface of the pier, so that any force a person may apply to it will not change the position of the reading telescope one-tenth of a second of arc.

"On August 25th and 26th I tried the experiment of observing Mars on two wires, after the plan proposed by Winnecke; but the inclination between the wires was so great that we at once abandoned this plan, not wishing to disturb the diaphragm of wires by inserting a new one at that time. In order to retain uniformity in the series we have not used the observations on Mars made on those days. The observations of the stars made on the fixed wire have, however, been included in the determination of mean place, as also those made on other days, when the planet was not observed.

"On October 15, the reading telescope having been accidentally injured, the observation of Mars was made, using one microscope. This observation has also been omitted.

"All the remaining observations, with the exception of October 7, have been made in the manner before stated. On that day four microscopes were read for each limb of the planet, and the observation has been included in the series.

EXPLANATION OF THE PRINTED COLUMNS.

"Column 1 contains the date.

"Column 2 contains the name of the object and the declinometer scale reading for Mars. The numbers in parentheses opposite "scale" specify the number of readings.

"Column 3 contains the mean of the circle microscope readings for the centre of the object observed, corrected for runs and flexure.

"Column 4 contains the refractions obtained as explained hereafter.

"Column 5 contains the computed nadirs obtained by comparing the apparent declination of the star on the given date with the final declination found for the whole series. The daily adopted nadir used for reduction of the observation of stars is given at the bottom of the page, and is assumed to have been constant for that day. During the year 1862, and prior to that time, we generally observed the nadir point in the morning, and adopted the Greenwich plan of combining our separate results, using the same nadir for a week, more or less, as the observations for nadir might indicate. This plan I have since been led to abandon. On examining the Mars series, it was found that on many days no nadir had been observed. This fact, together with the instability in our declinometer apparatus, of which I have before spoken, led me to think that the observations were not worth reducing for purposes of parallax. But my nadir investigations during the past year suggested the idea that these observations would throw some light on the stability or instability of the nadir point, independent of direct nadir observations. Our method of reduction was, first, to determine the mean declinations of all the stars with the nadir included; secondly, to apply the nadir for those days on which it was observed, and find the mean declinations. The mean of these results gave us an approximate standard from which to determine the nadirs on all other days. By this mode of reduction—and under the circumstances I knew of no better—the absolute declinations depend only on the observed nadirs.

"In case the mean declinations of the stars should not be correct, the effect on Mars' declination would be constant during the period when the same group of stars was observed. When this group was changed, there would be a sudden change in the planet's declination.

"Our Mars observations may be divided into two groups: first, from August 18 to September 24; second, from September 25 to November 1.

"The close agreement between our mean declinations of comparison stars and those used by Winnecke, "*Beobachtungen des Mars,*" would seem to indicate that they are very near the truth.

"Although these observations show no very large or sudden changes in the nadir point, yet they clearly indicate that a nadir determined on one day will not answer for any other. We also conclude that the nadir point is liable to change during the time of observation.

"The quantity in the parentheses opposite Mars is a mean of all the numbers for the date. That in brackets, [3″.54,] September 4, is marked to show that the observation of 80 Piscium was apparently bad. It was, however, used in finding the nadir for Mars. All the numbers in this column are to be increased one minute of arc

"Column 6 contains the reduction to mean place taken from Winnecke's '*Beobachtungen des Mars,*' corrected for (time + long. + 1.072 days.)

"Column 7 contains the seconds of mean declination for the comparison stars for 1862.0. The latitude adopted for the observatory is + 42° 39′ 49″.55.

Column 8 contains the apparent declination of the centre of Mars and the measured diameter *d*. The diameter is corrected for thickness of the wire, but not for irradiation.

"The adopted nadirs, barometer and thermometer readings, with the respective hours of observation, will be found at the bottom of the page.

COMPUTATIONS OF REFRACTIONS FOR SEPTEMBER 4, 1862.

18*h*. 55*m*. Sid. T.		0*h*. 55*m*. Sid. T.	
Bar. 30.040........	= 0.03346	Bar. 30.075........	= 0.03396
Ex. Ther. 68°.0	= 0.02553	Ex. Ther. 59°.7	= 0.03271
Log. Corr....	= 0.05899	Log. Corr....	= 0.06667

Variation of log. for 1*h*., = + 0.00128.

Log. for 0*h*. Sid. T., = 0.06549.

REFRACTION OF δ PISCIUM.

δ Piscium, log for 0*h*. Sid. T..............	=	0.06549
0*h*. 41*m*. = A. R., cor. 41*m*	= +	0.00087
Z. D. = + 35° 49′, log..................	=	0.06636
Z. D. = + 35° 49′, log...............	=	1.54962
Refraction = 41″.30	=	1.61598

"The refractions have been computed by the Greenwich tables, which are found in the Appendix of the Observations for 1836, as also expanded for great zenith-distances in the volume of Observations for 1853. No attached thermometer reading is used with the barometer in these observations, since for all zenith-distances less than 45° the neglecting of it will never amount to 0″.01.

"The barometer and thermometer are supposed to vary uniformly for the interval of time between the two readings; and the refractions are computed in proportion to the time.

COMPUTATION OF δ PISCIUM.

		°	′	″
Mean Circle Readings	= +	35	49	49.76
Nadir		—	1	6.30
	+	35	48	43.46
Refraction	+			41.30
	+	35	49	24.76
Latitude	+	42	39	49.55
App. Dec.	+	6	50	24.75
Reduction			—	26.71
Mean declination, 1862.0.....................	= +	6	49	58.08

"On the sheet of final mean declinations of comparison stars the declination of δ Piscium is found to be

+ 6° 49′ 58″.52, the difference being 0″.44. This applied to the nadir used gives from the observation of this star the corrected nadir—

	′ ″
	1 6.74
20 Ceti gives	7.15
26 Ceti gives	7.42
80 Piscium gives	[3.54]
γ Piscium gives	6.91
3298 L. L. gives	5.84
ξ Piscium gives	6.50
Mean	(1 6.30)

—The true nadir given by all the comparison stars, assuming the final declinations to be the standard. This, then, is the quantity to be used for the reduction of Mars, assuming all the observations to have equal weight.

MEAN DECLINATION OF STARS COMPARED WITH MARS, (1862.0.)

Date.	261 L. L.	44 Pisc.	670 L. L.	15 Ceti.	60 Pisc.	δ Pisc.	20 Ceti.	26 Ceti.
	° ′ + 0 55	° ′ + 1 10	° ′ + 4 05	° ′ — 1 15	° ′ + 5 59	° ′ + 6 49	° ′ — 1 53	° ′ + 0 37
1862.	″	″	″	″	″	″	″	″
August 18	. .	. .	. .	. .	. .	59.54	. .	32.99
19	. .	. .	. .	. .	. .	58.45	40.82	. .
20	. .	. .	. .	. .	. .	58.63	41 06	33.74
21	. .	. .	. .	. .	. .	58.23	40.52	33.40
24	. .	. .	. .	. .	. .	59.67	40.00	33.06
25	. .	. .	. .	. .	. .	58.22	. .	33.20
26	. .	. .	. .	. .	. .	. .	40.29	. .
29	. .	. .	. .	. .	. .	58.14	. .	32.82
September 2	. .	. .	. .	. .	. .	58.31	40.23	33.62
3	. .	. .	. .	. .	. .	58.47	40.72	34.27
4	. .	. .	. .	. .	. .	58.08	41.79	32.51
5	. .	. .	. .	. .	. .	58.21	40.54	33.24
7	. .	. .	. .	. .	. .	57.73	42.04	34.73
8	. .	. .	. .	. .	. .	. .	. .	34.05
9	. .	. .	. .	. .	. .	58.27	40.21	34.02
10	. .	. .	. .	. .	. .	59.83	. .	32.42
21	. .	. .	. .	. .	. .	59.92	40.49	33.84
22	. .	. .	. .	. .	. .	58.09	42.06	33.29
23	. .	. .	. .	. .	. .	57.72	41.53	33.40
24	. .	. .	. .	. .	. .	57.97	40.78	34.88
25	. .	. .	45.02	48.32	11.86	. .	41.65	. .
26	. .	. .	45.00	48.66	11.62	. .	39.88	. .
27	. .	. .	46.06	46.23	11.61	. .	41.67	. .
October 7	. .	. .	45.15	47.85	. .	. .	. .	34.07
8	. .	. .	45.18	48.59	. .	. .	. .	. .
14	. .	28.88	46.05	48.57	. .	. .	. .	33.56
15	. .	27.95	45.70	48.24	. .	. .	. .	34.51
23	. .	29.60	44.37	. .	. .	. .	. .	. .
27	15.81	29.70	44.12	. .	. .	. .	. .	33.13
28	15.48	29.36	45.59	. .	. .	. .	41.19	33.77
29	. .	29.54	44.41	. .	. .	. .	. .	. .
30	16.04	29.18	44.48	. .	. .	. .	40.94	33.15
November 1	. .	29.74	45.21	. .	. .	. .	41.29	35.24
Mean . .	15.78	29.24	45.10	48.06	11.69	58.52	40.94	33.63

* MEAN DECLARATIONS OF STARS COMPARED WITH MARS (1862.0).

Date.	80 Pisc.	89 Pisc.*	43 Ceti.	2614 L. L.	μ Pisc.	γ Pisc.	3298 L. L.	ξ Pisc.
	+ 4° 55′	+ 2° 50′	− 1° 10′	− 1° 07′	+ 5° 25′	+ 4° 47′	+ 2° 59′	+ 2° 30′
1862.	″	″	″	″	″	″	″	″
August 18	05.47	. .	. .	. .	. .	. .	. .	. .
19	. .	. .	. .	. .	. .	. .	. .	. .
20	05.78	. .	. .	. .	. .	. .	. .	. .
21	. .	. .	. .	. .	. .	. .	. .	. .
24	05.64	. .	. .	. .	49.37	15.53	41.48	15.20
25	. .	. .	. .	. .	. .	15.41	. .	16.25
26	05.41	. .	. .	. .	50.37	14.81	40.74	17.05
29	06.82	. .	. .	. .	. .	13.20	42.91	16.38
September 2	05.80	. .	. .	. .	. .	15.00	41.52	. .
3	. .	. .	. .	. .	. .	15.32	40.82	15.13
4	08.72	. .	. .	. .	. .	14.23	41.66	16.06
5	. .	. .	. .	. .	. .	14.72	. .	16.48
7	06.14	. .	. .	. .	. .	15.10	40.62	17.20
8	06.03	. .	. .	. .	. .	14.30	41.94	15.37
9	04.59	. .	. .	. .	. .	15.09	41.22	16.32
10	06.40	. .	. .	. .	. .	14.85	40.35	16.33
21	06.93	. .	. .	. .	50.25	13.94	39.67	15.86
22	. .	. .	. .	. .	. .	15.36	41.54	17.14
23	. .	. .	. .	. .	49.87	16.19	. .	17.33
24	. .	. .	. .	. .	50.85	14.38	41.19	15.76
25	. .	. .	22.14	. .	50.35	. .	. .	. .
26	. .	. .	22.93	01.75	51.00	. .	. .	. .
27	. .	. .	23.14	03.41	49.46	. .	. .	. .
October 7	05.33	10.87	22.95	. .	. .	. .	. .	. .
8	05.77	10.96	22.32	. .	. .	. .	. .	. .
14	. .	10.53	23.08	. .	. .	. .	. .	. .
15	04.59	11.46	. .	. .	. .	. .	. .	. .
23	. .	. .	. .	. .	. .	. .	. .	. .
27	. .	. .	. .	. .	. .	. .	. .	. .
28	. .	. .	. .	. .	. .	. .	. .	. .
29	. .	. .	. .	. .	. .	. .	. .	. .
30	. .	. .	. .	. .	. .	. .	. .	. .
November 1	. .	. .	. .	. .	. .	. .	. .	. .
Mean . .	05.96	10.95	22.76	02.58	50.19	14.84	41.20	16.26

* This table contains the individual results and mean of the following observations.

Date.	Object.	Corrected circle readings.	Refraction.	Computed Nadir.	Reduction to 1862.0.	Mean Declination, 1862.0.	App. Obs'd Dec. and Diam. Mars.	No. of measures each limb.	Remarks.
		° ′ ″	″	″	″	″	° ′ ″		
1862. Aug. 21	δ Piscium . . .	35 49 50.05	40.80	4.67	24.85	58.23			
	20 Ceti	44 33 12.02	55.60	3.96	26.83	40.52			
	26 Ceti	42 2 3.65	50.92	4.61	25.96	33.40			
	Mars 23′ 38″.19 .	39 46 24.80	47.04	(4.41)	. .	. .	+2 53 42.12 *d* 18.87	4	
	Scale 24′ 0″.0 . .	39 46 46.61							
24	δ Piscium . . .	35 49 48.89	42.04	5.19	25.29	59.67			
	20 Ceti	44 33 11.44	57.30	5.40	27.15	40.00			
	26 Ceti	42 2 4.01	52.50	6.91	26.32	33.06			
	80 Piscium . . .	37 44 39.98	45.11	6.66	25.16	5.64			
	Scale (3) 22′ 0″.0 .	39 39 16.55							
	Mars 22′ 8″.41 .	39 39 24.96	48.34	(6.30)	. .	. .	+3 0 42.55 *d* 21.57	4	Blazing; definition not good.
	μ Piscium . . .	37 13 57.95	44.32	7.16	24.25	49.37			
	ν Piscium . . .	37 52 31.03	45.39	5.65	23.94	15.53			
	3298 Lalande . . .	39 40 1.88	48.39	6.06	24.14	41.48			
	ξ Piscium . . .	40 9 27.37	49.26	7.40	24.06	15.20			
29	δ Piscium . . .	35 49 49.88	42.09	6.90	25.96	58.14			
	26 Ceti	42 2 3.81	52.59	7.33	26.85	32.82			
	80 Piscium . . .	37 44 38.26	45.20	5.66	25.79	6.82			
	Mars 23′ 53″.12 .	39 32 48.36	48.26	(6.54)	. .	. .	+3 7 19.47 *d* 22.96	4	Blazing badly.
	Scale (2) 24′ 0″.0 .	39 32 55.24							
	ν Piscium . . .	37 52 32.81	45.52	8.16	24.54	13.20			
	3298 Lalande . . .	39 39 59.91	48.54	4.81	24.71	42.91			
	ξ Piscium . . .	40 9 25.65	49.43	6.40	24.61	16.38			
Sept. 2	δ Piscium . . .	35 49 48.44	42.57	6.44	26.46	58.31			
	20 Ceti	44 33 10.06	58.01	5.52	27.94	40.23			
	26 Ceti	42 2 1.79	53.14	6.24	27.23	33.62			
	80 Piscium . . .	37 44 38.08	45.66	6.39	26.24	5.80			
	Scale 18′ 0″.0 . .	39 31 40.36							
	Mars 18′ 16″.65 .	39 31 56.75	48.71	(6.09)	. .	. .	+3 8 10.18 *d* 21.55	5	Definition good. Aperture of object-glass reduced to three inches.
	Scale 18′ 0″.0 .	39 31 39.85							
	ν Piscium . . .	37 52 29.90	45.91	6.07	24.97	15.00			
	3298 Lalande . . .	39 40 0.23	48.93	5.91	25.10	41.52			
3	δ Piscium . . .	35 49 48.06	42.23	5.85	26.59	58.47			
	20 Ceti	44 33 40.49	57.55	5.58	28.03	40.72			
	26 Ceti	42 2 1.04	52.72	5.76	27.32	34.27			
	Mars 22′ 8″.69 .	39 32 20.29	48.30	(5.84)	. .	. .	+3 7 46.80 *d* 21.87	4	
	Scale (2) 22′ 0″.0 .	39 32 11.60							
	ν Piscium . . .	37 52 29.41	45.54	5.32	25.08	15.32			
	3298 Lalande . . .	39 40 0.79	48.54	6.18	25.20	40.82			
	ξ Piscium . . .	40 9 25.72	49.41	6.93	25.09	15.13			
4	δ Piscium . . .	35 49 49.76	41.30	6.74	26.71	58.08			
	20 Ceti	44 33 13.24	56.29	7.15	28.11	41.79			
	26 Ceti	42 2 4.34	51.58	7.42	27.42	32.51			
	80 Piscium . . .	37 44 36.33	44.33	[3.54]	26.47	8.72			
	Mars 12′ 49″.50 .	39 32 59.15	47.31	(6.30)	. .	. .	+3 7 9.39 *d* 23.25	3	Blazing badly.

Date.	Time.	Bar.	Ther.	Adopted Nadir.
	h. m.	in.	°	′ ″
Aug. 21	1 30	29.955	64.2	1 4.38
24	18 10	30.237	62.0	1 6.34
	1 30	30.179	52.0	
29	18 30	29.922	62.0	1 6.52
	1 50	30.087	48.4	
Sept. 2	0 50	29.888	42.1	1 6.23
	1 50	29.892	41.6	
3	23 50	30.093	49.9	1 5.80
	1 55	30.105	48.8	
4	18 55	30.040	68.0	1 6.30
	0 55	30.075	59.7	

Date.	Object.	Corrected circle readings.	Refraction.	Computed Nadir.	Reduction to 1862.0.	Mean Declination, 1862.0.	App. Obs'd Dec. and Diam. Mars.	No. of measures each limb.	Remarks.
1862.		° ′ ″	″	″	″	″	° ′ ″		
Sept. 4	Scale (2) 12′ 35″.0	39 32 44.65							
	ν Piscium . . .	37 52 31.82	44.61	6.91	25.19	14.23			
	3298 Lalande . . .	39 40 1.33	47.56	5.84	25.30	41.66			
	ξ Piscium . . .	40 9 26.18	48.42	6.50	25.19	16.06			
5	δ Piscium . . .	35 49 50.11	40.77	6.69	26.84	58.21			
	20 Ceti	44 33 12.72	55.56	5.98	28.19	40.54			
	26 Ceti . . .	42 2 4.29	50.89	6.77	27.51	33.24			
	Mars 20′ 26″.37 .	39 33 51.13	46.68	(6.42)	. .	. .	+3 6 18.16 d 21.52	4	
	Scale (2) 20′ 0″.0 .	39 33 24.76							
	ν Piscium . . .	37 52 31.92	43.99	6.50	25.30	14.72			
	ξ Piscium . . .	40 9 26.46	47.70	6.16	25.29	16.48			
7	δ Piscium . . .	35 49 49.81	40.33	6.17	27.06	57.73			
	20 Ceti	44 33 13.69	54.97	6.48	28.31	42.04			
	26 Ceti	42 2 2.17	50.36	4.28	27.67	34.73			
	80 Piscium . . .	37 44 38.74	43.28	5.20	26.77	6.14			
	Scale 16′ 0″.0 .	39 35 40.14							
	Mars 16′ 34″.03 .	39 36 14.06	46.26	(5.38)	. .	. .	+3 3 54.61 d 22.05	6	
	Scale (2) 16′ 0″.0 .	39 35 39.93							
	ν Piscium . . .	37 52 30.80	43.54	5.12	25.49	15.10			
	3298 Lalande . . .	39 40 2.33	46.41	5.96	25.57	40.62			
	ξ Piscium . . .	40 9 25.04	47.25	4.44	25.44	17.20			
8	26 Ceti	42 2 1.80	50.88	4.50	27.74	34.05			
	80 Piscium . . .	37 44 37.81	43.77	4.85	26.86	6.03			
	Mars 18′ 12″.73 .	39 37 45.46	46.88	(4.96)	. .	. .	+3 2 22.17 d 21.85	4	Blazing.
	Scale (2) 18′ 0″.0 .	39 37 32.73							
	ν Piscium . . .	37 52 30.50	44.10	5.46	25.57	14.30			
	3298 Lalande . . .	39 39 59.86	47.03	4.18	25.64	41.94			
	ξ Piscium . . .	40 9 25.72	47.87	5.81	25.51	15.37			
9	δ Piscium . . .	35 49 48.34	41.64	6.21	27.26	58.27			
	20 Ceti	44 33 10.56	56.75	5.23	28.41	40.21			
	26 Ceti	42 2 1.69	52.0	5.57	27.80	34.02			
	80 Piscium . . .	37 44 39.20	44.69	7.33	26.95	4.59			
	Mars 16′ 32″.87 .	39 39 29.23	47.89	(5.98)	. .	. .	+3 0 38.41 d 21.00	4	
	Scale (2) 16 0″.0 .	39 38 56.36							
	ν Piscium . . .	37 52 29.79	44.97	5.71	25.66	15.09			
	3298 Lalande . . .	39 40 0.63	47.94	5.94	25.72	41.22			
	ξ Piscium . . .	40 9 24.79	48.81	5.90	25.59	16.32			
10	δ Piscium . . .	35 49 46.63	41.26	4.22	27.36	59.83			
	26 Ceti	42 2 3.26	51.53	6.74	27.87	32.42			
	80 Piscium . . .	37 44 37.36	44.28	5.09	27.04	6.40			
	Mars 24′ 39″.48 .	39 41 29.85	47.47	(5.57)	. .	. .	+2 58 37.80 d 23.42	3	
	Scale 24′ 40″.0 .	39 41 30.37							
	ν Piscium . . .	37 52 29.94	44.55	5.52	25.74	14.85			
	3298 Lalande . . .	39 40 1.45	47.49	6.38	25.79	40.35			
	ξ Piscium . . .	40 9 24.76	48.33	5.46	25.66	16.33			

Date.	Time.	Bar.	Ther.	Adopted Nadir.
	h. m.	in.	°	′ ″
Sept. 5	23 50	29.961	65.1	1 6.38
	1 50	29.953	63.9	
7	0 25	29.902	69.4	1 5.38
	2 0	29.902	67.6	
8	19 5	29.843	77.0	1 4.92
	1 50	29.981	62.4	
9	19 15	30.158	65.0	1 5.96
	1 55	30.197	56.3	
10	19 20	30.197	69.0	1 5.53
	1 50	30.174	60.8	

Date.	Object.	Corrected circle readings.	Refraction.	Computed Nadir.	Reduction to 1862.0.	Mean Declination, 1862.0.	App. Obs'd Dec. and Diam. Mars.	No. of measures each limb.	Remarks.
1862.		° ′ ″	″	″	″	″	° ′ ″		
Sept. 21	δ Piscium	35 49 44.81	42.21	4.35	28.36	59.92			
	20 Ceti	44 33 9.37	57.53	5.30	28.89	40.49			
	26 Ceti	42 2 0.29	52.72	5.54	28.45	33.84			
	80 Piscium	37 44 35.16	45.31	4.78	27.90	6.93			
	Mars 12′ 36″.17	40 15 5.89	49.58	(5.71)	- -	- -	+2 24 59.79 d 23.55	4	Blazing badly.
	Scale (2) 12′ 35″.0	40 15 4.72							
	μ Piscium	37 13 53.56	44.52	5.69	26.97	50.25			
	ν Piscium	37 52 29.23	45.58	6.65	26.55	13.94			
	3298 Lalande	39 40 0.53	48.62	7.28	26.48	39.67			
	ξ Piscium	40 9 23.63	49.50	6.15	26.31	15.86			
22	δ Piscium	35 49 48.79	41.66	7.85	28.43	58.09			
	20 Ceti	44 33 13.35	56.76	8.54	28.92	42.06			
	26 Ceti	42 2 3.21	51.98	7.76	28.49	33.29			
	Mars 16′ 22″.28	40 19 1.67	48.93	(7.44)	- -	- -	+2 21 6.39 d 23.75	5	
	Scale (2) 16′ 0″.0	40 18 39.39							
	ν Piscium	37 52 30.14	44.86	6.90	26.61	15.36			
	3298 Lalande	39 40 1.10	47.81	7.08	26.52	41.54			
	ξ Piscium	40 9 24.81	48.66	6.54	26.36	17.14			
23	δ Piscium	35 49 50.17	40.95	8.60	28.51	57.72			
	20 Ceti	44 33 14.12	55.81	8.39	28.95	41.53			
	26 Ceti	42 2 4.29	51.13	8.03	28.53	33.40			
	Mars 22′ 19″.38	40 23 1.26	48.27	(7.72)	- -	- -	+2 17 7.74 d 23.58	4	
	Scale (2) 22′ 0″.0	40 22 41.88							
	μ Piscium	37 13 57.21	43.16	8.12	27.11	49.87			
	ν Piscium	37 52 30.29	44.20	6.45	26.67	16.19			
	ξ Piscium	40 9 25.64	47.97	6.73	26.41	17.33			
24	δ Piscium	35 49 48.12	42.31	7.99	28.59	57.97			
	20 Ceti	44 33 11.14	57.66	7.28	28.97	40.78			
	26 Ceti	42 2 0.69	52.85	6.19	28.57	34.88			
	Mars 26′ 31″.40	40 27 1.27	50.01	(7.36)	- -	- -	+2 13 5.63 d 22.95	4	
	Scale (2) 26′ 34″.0	40 27 3.87							
	μ Piscium	37 13 54.33	44.64	6.78	27.17	50.85			
	ν Piscium	37 52 30.15	45.73	7.90	26.73	14.38			
	3298 Lalande	39 40 0.42	48.76	7.45	26.62	41.19			
	ξ Piscium	40 9 25.14	49.64	7.94	26.45	15.76			
25	670 Lalande	38 33 57.31	46.53	8.64	29.25	45.02			
	15 Ceti	43 55 20.95	56.22	8.82	29.26	48.32			
	60 Piscium	36 40 33.99	43.49	8.39	28.77	11.86			
	20 Ceti	44 33 13.32	57.44	9.27	29.0	41.65			
	Mars 31′ 34″.54	40 31 6.14	49.91	(8.58)	- -	- -	+2 9 2.08 d 22.22	3	
	Scale (2) 31′ 0″.0	40 30 31.60							
	43 Ceti	43 49 56.04	56.03	7.94	28.18	22.14			
	μ Piscium	37 13 56.15	44.37	8.40	27.24	50.35			

Date.	Time.	Bar.	Ther.	Adopted Nadir.
	h. m.	in.	°	′ ″
Sept. 21	23 50	30.189	52.5	1 5.75
	1 30	30.189	49.9	
22	23 50	30.134	56.6	1 7.42
	1 30	30.134	56.9	
23	20 10	29.922	67.0	1 7.80
	1 30	29.853	59.7	
24	0 50	29.961	46.1	1 7.44
	1 10	29.961	45.5	
25	0 30	29.994	48.7	1 8.56
	1 30	29.993	48.5	

Date.	Object.	Corrected circle readings.	Refraction.	Computed Nadir.	Reduction to 1862.0.	Mean Declination, 1862.0.	App. Obs'd Dec. and Diam. Mars.	No. of measures each limb.	Remarks.
		° ′ ″	″	″	″	″	° ′ ″		
1862. Sept. 26	670 Lalande	38 33 56.92	46.36	8.15	29.32	45.00			
	15 Ceti	43 58 20.96	56.01	8.65	29.29	48.66			
	60 Piscium	36 40 33.81	43.33	8.12	28.84	11.62			
	20 Ceti	44 33 11.21	57.25	6.99	29.02	39.88			
	Scale (2) 14′ 0″.0	40 34 45.37							
	Mars 14′ 27″.42	40 35 12.79	49.88	(7.89)	. .	. .	+2 4 54.77 *d* 23.68	6	
	43 Ceti	43 49 56.44	55.88	8.22	28.21	22.93			
	μ Piscium	37 13 55.04	44.26	7.24	27.30	51.00			
27	670 Lalande	38 33 56.26	45.73	6.89	29.35	46.06			
	15 Ceti	43 55 19.10	55.24	6.02	29.29	46.23			
	60 Piscium	36 40 34.17	42.74	7.93	28.88	11.61			
	20 Ceti	44 33 13.60	56.45	8.58	29.02	41.67			
	Mars 17′ 31″.06	40 39 21.45	49.24	(7.70)	. .	. .	+2 0 46.56 *d* 22.71	4	Blazing. Atmosphere hazy.
	Scale (2) 17′ 0″.0	40 38 50.39							
	43 Ceti	43 49 57.26	55.07	8.23	28.21	23.14			
	u Piscium	37 13 57.0	43.61	8.58	27.33	49.46			
Oct. 7	670 Lalande	38 33 57.75	44.54	7.57	29.73	45.15			
	15 Ceti	43 55 21.88	53.82	7.41	29.32	47.85			
	Mars	41 18 17.34	49.16	(7.65)	. .	. .	+1 21 50.70 *d* 23.79	.	Read by microscopes—4 mic. for each limb.
	26 Ceti	42 2 3.89	50.42	7.18	28.79	34.07			
	80 Piscium	37 44 39.87	43.33	8.25	28.64	5.33			
	89 Piscium	39 46 31.38	46.61	7.70	28.31	10.87			
	43 Ceti	43 49 58.17	53.74	7.81	28.21	22.95			
8	670 Lalande	38 33 57.10	44.0	6.40	29.75	45.18			
	15 Ceti	43 55 22.18	53.13	7.01	29.31	48.59			
	Mars 11′ 48″.51	41 21 37.46	48.63	(6.52)	. .	. .	+1 18 29.98 *d* 24.78	5	
	Scale 12′ 0″.0	41 21 48.25							
	80 Piscium	37 44 38.82	42.78	6.67	28.66	5.77			
	89 Piscium	39 46 30.73	46.02	6.47	28.32	10.96			
	43 Ceti	43 49 57.11	53.05	6.04	28.19	22.32			
14	44 Piscium	41 29 6.83	51.26	7.43	29.65	28.88			
	670 Lalande	38 33 54.48	46.23	6.12	29.86	46.05			
	15 Ceti	43 55 20.16	55.81	7.58	29.22	48.57			
	Mars 21′ 5″.87	41 37 59.01	51.54	(7.19)	. .	. .	+1 2 6.19 *d* 24.95	4	
	Scale (2) 21′ 0″.0	41 37 53.14							
	26 Ceti	42 2 2.06	52.25	7.14	28.75	33.56			
	89 Piscium	39 46 29.47	48.27	4.49	28.35	10.53			
	43 Ceti	43 49 55.97	55.65	7.39	28.08	23.08			
23	44 Piscium	41 29 7.06	53.71	9.99	29.53	29.60			
	670 Lalande	38 33 57.19	48.46	11.08	29.88	44.37			
	Mars 31′ 55″.89	41 47 19.94	54.36	(10.53)	. .	. .	+0 52 45.78	6	Bisected the centre by the eye.
	Scale (3) 32′ 0″.0	41 47 24.05							

Date.	Time.	Bar.	Ther.	Adopted Nadir.
	h. m.	in.	°	′ ″
Sept. 26	0 30	29.998	50.6	1 8.05
	1 10	29.998	48.9	
27	23 40	30.002	57.6	1 7.85
	1 25	30.006	57.2	
Oct. 7	21 05	29.764	71.0	1 7.62
	0 40	29.780	66.5	
8	21 10	29.764	76.0	1 6.48
	0 15	29.766	73.0	
14	0 28	29.880	50.1	1 7.07
	1 20	29.880	50.1	
23	0 15	30.203	32.8	1 10.35
	1 0	30.203	31.6	

Date.	Object.	Corrected circle readings.	Refraction.	Computed Nadir.	Reduction to 1862.0.	Mean Declination, 1862.0.	App. Obs'd Dec. and Diam. Mars.	No. of measures each limb.	Remarks.
		° ′ ″	″	″	″	″	° ′ ″		
1862. Oct. 27	44 Piscium	41 29 7.80	52.59	9.52	29.44	29.70			
	261 Lalande	41 44 21.17	53.03	9.95	29.52	15.81			
	670 Lalande	38 33 58.12	47.44	10.96	29.85	44.12			
	Mars 21′ 6″.17	41 44 29.60	53.12	(10.23)	. .	. .	+0 55 37.06 *d* 20.84	4	
	Scale (3) 21′ 0″.0	41 44 23.43							
	26 Ceti	42 2 4.26	53.71	10.48	28.43	33.13			
28	261 Lalande	41 44 21.14	53.14	10.00	29.49	15.48			
	44 Piscium	41 29 7.81	52.67	9.58	29.41	29.36			
	670 Lalande	38 33 56.32	47.57	9.21	29.83	45.59			
	Mars 16′ 14″.06	41 43 2.46	53.12	(9.66)	. .	. .	+0 57 3.63 *d* 21.13	4	Very steady; thin clouds.
	Scale (2) 16′ 0″.0	41 42 48.40							
	20 Ceti	44 33 13.45	58.66	9.95	28.33	41.19			
	26 Ceti	42 2 3.36	53.73	9.56	28.39	33.77			
30	261 Lalande	41 44 21.35	52.0	9.00	29.42	16.04			
	44 Piscium	41 29 8.74	51.55	9.32	29.34	29.18			
	670 Lalande	38 33 58.05	46.49	9.88	29.79	44.48			
	Mars 13′ 40″.38	41 39 20.56	51.85	(9.44)	. .	. .	+1 0 46.58 *d* 20.25	4	
	Scale (2) 13′ 40″.0	41 39 20.18							
	20 Ceti	44 33 14.15	57.38	9.26	28.22	40.94			
	26 Ceti	42 2 4.81	52.55	9.74	28.30	33.15			
Nov. 1	44 Piscium	41 29 10.16	50.87	10.0	29.28	29.74			
	670 Lalande	38 33 59.19	45.89	10.39	29.76	45.21			
	Mars 25′ 57″.86	41 34 32.21	51.06	(10.03)			+1 5 36.49 *d* 19.47	4	Observed through thick clouds.
	Gilliss (9)	41 33 56.42	51.06		28.99	43.11			
	Scale (2) 26′ 0″.0	41 34 34.35							
	20 Ceti	44 33 16.55	56.67	10.85	28.12	41.29			
	26 Ceti	42 2 4.68	51.91	8.89	28.22	35.24			

Date.	Time.	Bar.	Ther.	Adopted Nadir.
	h. m.	in.	°	′ ″
Oct. 27	22 20	29.607	36.0	1 9.98
	0 20	29.742	35.4	
28	22 27	30.040	40.0	1 9.70
	0 40	30.020	39.0	
30	22 35	29.922	48.0	1 9.26
	0 30	29.895	47.8	
Nov. 1	23 50	29.837	53.5	1 10.50
	1 0	29.835	52.5	

"The flexure correction is + 1″.34 for Dec. + 0°.

"The runs of the microscopes have been assumed as constant during the whole period of observation. The following observed values will show that in considering the runs constant we do not introduce a greater error than would result from taking a single determination.

	Sept. 23—Temp. 60°.	Oct. 7—Temp. 66°.	Oct. 30—Temp. 50°.	Oct. 31—Temp. 50°.
Mic. E	+ 0.80	+ 1.00	+ 0.52	+ 0.66
F	− 0.58	− 0.20	− 0.20	− 0.20
G	+ 1.87	+ 1.87	+ 1.83	+ 1.80
H	+ 0.30	+ 0.41	+ 0.58	+ 0.52

"The runs computed separately for each microscope are as follows:

″	Mic.	″	
100	E	+ 0.80	
	F	— 0.28	
	G	+ 1.80	
	H	+ 0.38	Mean + 0″.68.

"In a few cases the Barometer and Thermometer were read only once, and near the middle of the observations for the night. In such cases, the observations made at 8hrs. p. m. have also been used to determine the changes. It is not possible for an error of more than 0″.05 to arise from this cause.

"G. W. HOUGH.

DUDLEY OBSERVATORY, *February*, 1864."

SOLAR PARALLAX, DEDUCED FROM OBSERVATIONS OF MARS WITH EQUATORIAL INSTRUMENTS.

It has been shown that corresponding observations with Equatorial Instruments were received from Upsala and Santiago de Chile only. Moreover, the method of observation proposed in the circular addressed to astronomers and strictly followed at Washington was not conformed to at either of the other Observatories. Both Upsala and Santiago de Chile used two parallel threads in their micrometers, the intervals between the threads being rather less than that of the apparent diameter of the planet; and the measurements of the planet at those Observatories were made by moving the micrometer screws until, by estimation, equal segments of its disk were cut off by the respective threads and of the comparison star by its bi-section alternately with each of the parallel threads.

This method of observation was proposed for meridian measurements of the planet by Dr. Winnecke in the "*Bulletin de l'Académie Imperiale des Sciences de St. Petersbourg*," before referred to, and it seems only just to remark that the reduced results of observations thus made with Equatorial Instruments are more harmonious than those in which only one micrometer thread has been used. The eye seems able to decide upon the equality of the planetary segments with greater precision and uniformity than of actual tangents to the disk.

In deducing a value for the solar parallax, observations made at Santiago are combined with those at Washington and Upsala; only those days being selected upon which the planet and pre-selected star were observed at each of the stations. The mode of reduction was as follows:

The hourly changes of the planet in declination for Washington sidereal noon of each day, from August 27 to November 8, were computed from the American Ephemeris and Nautical Almanac. They are given in Table I.

TABLE I.—WASHINGTON SIDEREAL NOON.

Date.		$\frac{d\delta}{dt}$.	Date.		$\frac{d\delta}{dt}$.	Date.		$\frac{d\delta}{dt}$.
		″			″			″
Aug.	27	+ 3.027	Sept.	21	— 9.605	Oct.	16	— 4.225
	28	2.399		22	9.823		17	3.611
	29	1.784		23	10.003		18	2.981
	30	1.175		24	10.151		19	2.342
	31	+ 0.566		25	10.270		20	1.690
Sept.	1	— 0.040		26	10.344		21	1.024
	2	0.643		27	10.367		22	— 0.340
	3	1.239		28	10.338		23	+ 0.364
	4	1.826		29	10.270		24	1.069
	5	2.408		30	10.186		25	1.776
	6	2.981	Oct.	1	10.074		26	2.485
	7	3.543		2	9.919		27	3.198
	8	4.096		3	9.711		28	3.909
	9	4.633		4	9.461		29	4.615
	10	5.160		5	9.185		30	5.317
	11	5.676		6	8.887		31	6.017
	12	6.172		7	8.554	Nov.	1	6.714
	13	6.651		8	8.184		2	7.399
	14	7.112		9	7.786		3	8.076
	15	7.546		10	7.357		4	8.746
	16	7.958		11	6.899		5	9.400
	17	8.345		12	6.411		6	10.043
	18	8.711		13	5.895		7	+ 10.681
	19	9.048		14	5.364			
	20	— 9.346		15	— 4.811			

Each comparison of the planet with the star was reduced to the meridian of the place of observation, by means of the hourly changes.

In addition to the correction for proper motion, rigorous reduction would require that the changes due to changes of differential refraction and parallax in declination should be taken into account. But as the differences of declination are always small, and the comparisons of planet and star were always made within an hour of the meridian, the correction for the former never exceeded 0″.01, and therefore was neglected. For the correction arising from changes in the parallax in declination, the following table was prepared. As its maximum value is only 0″.04, it can have no sensible effect on the determination of the probable error of the micrometrical comparisons, and therefore, in practice, a mean correction was applied to the reduced difference of declination.

TABLE II.

$\triangle p$. WASHINGTON.				$\triangle p$. UPSALA.			
Hour Angle.	20m.	40m.	1h.	Hour Angle.	20m.	40m.	1h.
	″	″	″		″	″	″
Sept. 5	+ 0.01	+ 0.02	+ 0.04	Sept. 5	0.00	+ 0.01	+ 0.02
9	0.01	0.02	0.04	9	0.00	0.01	0.02
13	0.01	0.02	0.03	13	0.00	0.01	0.02
17	0.01	0.01	0.03	17	0.00	0.01	0.02
21	0.00	0.01	0.03	21	0.00	0.00	0.01
25	0.00	0.01	0.02	25	0.00	0.00	0.01
29	0.00	0.00	0.02	29	0.00	0.00	0.01
Oct. 3	0.00	0.00	0.02	Oct. 3	0.00	0.00	0.01
7	0.00	0.01	0.02	7	0.00	0.00	0.01
11	0.01	0.01	0.03	11	0.00	0.01	0.02
15	0.01	0.01	0.03	15	0.00	0.01	0.02
19	0.01	0.01	0.03	19	0.00	0.01	0.02
23	0.01	0.02	0.03	23	0.00	0.01	0.02
27	0.01	0.02	0.04	27	0.00	0.01	0.02
31	0.01	0.02	0.04	31	0.00	0.01	0.02
Nov. 4	+ 0.01	+ 0.02	+ 0.04	Nov. 4	0.00	+ 0.01	+ 0.03

The differences of declination reduced to the meridian were then corrected for differential refraction. During the period embraced by the observations, Mars was so slightly gibbous that the correction for defective illumination was insensible and was not taken into account. Finally, the arrangement of the observations was such that the diameter of the planet, the effect of irradiation, and the thickness of the micrometer thread are considered to be eliminated from the mean result.

The observations at Upsala and Santiago afford data which are given in the following table. Column 1 shows the date; column 2, $\triangle \delta$, the mean difference of declination reduced to the meridian; column 3, $\triangle k$, the correction for differential refraction; column 4, $\triangle p$, the correction for change of parallax; column 5, Red. the reduction to the meridian of Washington; column 6, $\triangle \delta_0$, the reduced difference of declination; and column 7, r, the probable error of the series found by comparing each measurement reduced to the meridian with the mean given in column 2.

SANTIAGO.

Date.		$\Delta \delta$.	Δk.	Δp.	Red.	$\Delta \delta_0$.	r.
		″	″	″	″	″	″
Sept.	4	− 149.85	− 0.07	− 0.02	− 0.78	− 150.72	± 0.14
	5	+ 54.56	+ 0.03	0.02	1.03	+ 53.54	0.07
	7	− 88.93	− 0.04	0.02	1.51	− 90.50	0.09
	8	− 180.63	− 0.08	0.02	1.75	− 182.48	0.09
	20	− 301.09	− 0.12	0.01	3.97	− 305.19	0.09
	23	+ 75.75	+ 0.02	0.01	4.25	+ 71.51	0.08
	25	− 159.91	− 0.06	0.01	4.36	− 164.34	0.06
	27	− 86.24	− 0.03	0.01	4.41	− 90.69	0.11
	28	+ 186.32	+ 0.07	0.01	4.39	+ 181.99	0.08
Oct.	5	− 237.20	− 0.09	0.01	3.90	− 241.20	0.19
	7	+ 63.36	+ 0.03	0.03	3.64	+ 59.72	0.07
	8	− 137.76	− 0.05	0.01	3.48	− 141.30	0.09
	10	+ 160.77	+ 0.06	0.02	− 3.13	+ 157.68	0.08
	24	− 202.18	− 0.08	0.02	+ 0.45	− 201.83	0.07
	27	− 233.07	− 0.09	0.03	1.36	− 231.83	0.17
	29	− 45.36	− 0.01	0.02	1.96	− 43.43	0.06
	31	− 169.30	− 0.07	0.03	2.56	− 166.84	0.07
Nov.	2	+ 152.90	+ 0.06	− 0.02	+ 3.14	+ 156.08	0.11

UPSALA.

Date.		$\Delta \delta$.	Δk.	Δp.	Red.	$\Delta \delta_0$.	r.
		″	″	″	″	″	″
Sept.	8	− 184.30	− 0.17	+ 0.01	− 27.07	− 211.53	± 0.07
	20	− 285.02	− 0.28	0.01	50.50	− 335.79	0.14
	25	− 131.59	− 0.13	0.00	63.33	− 195.05	0.05
	27	− 55.86	− 0.05	0.00	65.84	− 121.75	0.05
Oct.	5	− 217.61	− 0.22	0.00	52.75	− 270.58	0.39
	10	+ 174.46	+ 0.18	0.01	− 47.21	+ 127.44	0.09
	31	− 232.87	− 0.24	+ 0.01	+ 40.29	− 192.81	0.07

WASHINGTON.

Date.		$\Delta \delta$.	Δk.	Δp.	Red.	$\Delta \delta_0$.	r.
		″	″	″	″	″	″
Sept.	4	− 175.48	− 0.08	+ 0.02	0.00	− 175.54	± 0.16
	5	+ 30.45	+ 0.01	0.02	0.00	+ 30.48	0.17
	7	− 113.40	− 0.05	0.02	0.00	− 113.43	0.23
	8	− 206.37	− 0.09	0.03	0.00	− 206.43	0.10
	23	+ 45.97	+ 0.02	0.02	0.00	+ 46.01	0.21
	25	− 188.56	− 0.08	0.01	0.00	− 188.63	0.25
	28	+ 156.59	+ 0.06	0.01	0.00	+ 156.66	0.11
Oct.	7	+ 34.44	+ 0.01	0.02	0.00	+ 34.47	0.12
	8	− 165.48	− 0.07	0.01	0.00	− 165.54	0.19
	24	− 224.85	− 0.10	0.02	0.00	− 224.93	0.19
	27	− 256.18	- 0.12	0.03	0.00	− 256.27	0.42
	29	− 64.37	− 0.03	0.02	0.00	− 64.38	0.39
	31	− 187.93	− 0.11	0.03	0.00	− 188.01	0.25
Nov.	2	+ 135.28	+ 0.05	+ 0.03	0.00	+ 135.36	0.18

In obtaining the mean results given in column 2 for the Santiago Observatory, the adopted value of the micrometer screw is that given by Dr. Moesta at page xi of the Introduction to the printed observations. The several readings of the screw were first corrected for periodical inequality in accordance with page ix of the same publication. The similar mean results for Upsala have been taken from the careful reduction of Dr. Schultz, as printed in his "Mars-Beobachtungen, 1862."

A comparison of the reduced differences of declination $\Delta\,\delta_0$, in column 6 of the preceding table, affords immediately the parallactic angle at the planet, and from this the horizontal parallax was computed by formulas similar to those in Professor Chauvenet's "*Manual of Spherical and Practical Astronomy,*" vol. I, art. 426. In these computations the distances of Mars from the earth were interpolated from the ephemeris given by Dr. Winnecke in the memoir "*Beobachtungen des Mars,* 1862." And in order that the results of different days and different observatories might be systematically combined, weights were assigned to each by taking into account—1st, the probable errors of a micrometrical comparison; 2d, the distances of the planet from the earth; and 3d, the geographical positions of the observatories.

A reduction of each micrometrical measurement to the chosen epoch indicates that the probable error of a single differential measurement is $\pm\, 0''.4$; and adopting the mean result of ten such measurements as the unit of weight when the distance of the planet from the earth $= 1$, if we represent the probable error of this mean by r_0, we have

$$r_0 = \pm\,\frac{0''.4}{\sqrt{10}} = \pm\,0''.1265$$

and 2 log. $r_0 = 8.20412$.

Denoting the probable error of the mean result of a series of comparisons by r, and its weight by w, for any observatory, we shall have, when Δ is the distance of Mars from the earth,

$$w = \frac{(8.20412)}{r^2}\cdot\frac{1}{\Delta^2}$$

For combining the data of different observatories the factor $\frac{\varphi - \varphi_1}{90}$ has been introduced, φ and φ_1 representing the latitudes of the northern and southern stations. This factor is—

$$\text{For Upsala and Santiago}\quad \frac{\varphi - \varphi_1}{90} = 1.037$$

$$\text{For Washington and Santiago}\quad \frac{\varphi - \varphi_1}{90} = 0.804$$

and thence for the relative weights we have—

$$\text{Upsala and Santiago}\quad w = \frac{(8.21990)}{r^2\,\Delta^2}$$

$$\text{Washington and Santiago}\; w = \frac{(8.10938)}{r^2\,\Delta^2}$$

The results of the individual computations for each day are given in the following tables, in which columns log p and π show respectively log. horizontal and arc value of the solar parallax.

UPSALA AND SANTIAGO.

Date.	Log. p.	Log. Δ.	π.	w.
			″	
Sept. 8	1.30940	9.63660	8.831	6.80
20	1.33279	9.61308	8.828	3.56
25	1.33469	9.60891	8.782	12.41
27	1.33982	9.60833	8.875	6.90
Oct. 5	1.31663	9.61254	8.495	0.53
10	1.32960	9.62047	8.914	6.57
31	1.26375	9.69031	8.996	7.04

SANTIAGO AND WASHINGTON.

Date.		Log. p.	Log. Δ.	π.	w.
				″	
Sept.	4	1.32524	9.64761	9.394	1.44
	5	1.29330	9.64476	8.671	1.95
	7	1.29084	9.63924	8.513	1.11
	8	1.30977	9.63660	8.838	3.79
	23	1.33699	9.61013	8.854	1.53
	25	1.31410	9.60891	8.376	1.18
	28	1.33412	9.60828	8.758	4.22
Oct.	7	1.33281	9.61524	8.873	3.92
	8	1.31510	9.61682	8.549	1.70
	24	1.29427	9.66172	9.036	1.18
	27	1.31875	9.67347	9.822	0.28
	29	1.25183	9.68174	8.582	0.36
	31	1.25635	9.69031	8.844	0.79
Nov.	2	1.24701	9.69914	8.834	1.15

Combining all the results above, we have—

From Upsala and Santiago............ $\pi = 8''.859$ $w = 43.81$

Washington and Santiago........ $8''.810$ 24.60

and for the concluded result of all the Equatorial Observations of Mars in 1862,

Solar parallax $= 8''.8415$.

As only one southern observatory took part in the observations, there is no way by which to ascertain whether constant errors may not affect the value obtained, and it is difficult to estimate the probable error though it is not likely to exceed one-tenth of a second.

OBSERVATORY, *March* 1, 1863.

SOLAR PARALLAX, DEDUCED FROM OBSERVATIONS WITH MERIDIAN INSTRUMENTS.

WASHINGTON AND SANTIAGO DE CHILE.

Between August 21 and November 3 the planet and stars of Dr. Winnecke's Ephemeris were observed on 39 nights with the Mural Circle at Washington, and on 50 nights with the Meridian Circle at Santiago de Chile. The dates on which corresponding observations were made are as follows:

August 25, 27, 28;
September 3, 4, 5, 8, 13, 22, 23, 24, 25, 26, 28;
October 2, 6, 7, 8, 20, 23, 24, 29, 30, 31;
November 2, 3.

From these the subjoined dates were selected as furnishing the best observations to be used in determining the parallax, viz:

August 25, 28;
September 5, 24, 25, 26, 28;
October 6, 20, 23;
November 2, 3.

The other days were excluded from the special computation because of remarks at the times of observation which made it doubtful whether they were of sufficient accuracy to be incorporated in a determination of so great delicacy. They have been discussed separately, and if it be thought advisable they may be combined with the others by arbitrary relative weights.

All the dates of observation, names of the observers at each station, symbols showing the mode of observation, and remarks at the time, are subjoined. The letters *m.* 1, 2, appended to the Washington Observations, indicate that equal segments of the planet were observed above and below the horizontal threads, and the stars were bisected by one or both of them, as proposed by Dr. Winnecke; and where *m* only is given, it signifies that the stars also were observed between the threads. The Santiago Observations were uniformly made, both threads being used for the planet, and alternate ones for stars.

DATES AND CHARACTER OF OBSERVATIONS.

WASHINGTON.			SANTIAGO.	
Date.	Observer.	Remarks.	Observer.	Remarks.
Aug. 21	. . . .	. . . .	Moesta.	Image badly defined.
22	. . . .	. . . .	"	Good; except δ Piscium and 80 Piscium.
23	. . . .	. . . .	"	Good.
24	. . . .	. . . .	"	Vacillating.
25	Hubbard . . m.		"	Very satisfactory.
26	. . . .	. . . .	"	Good; but large hour angles.
27	Hubbard . . m.	Observed through clouds.	"	Good; but large hour angles.
28	Hesse . . . m. 1		Schumacher.	Good; but large hour angles.
29	. . . .	. . . .	"	Planet tremulous; stars good.
31	. . . .	. . . .	"	Tolerably good.
Sept. 2	Hesse . . . m. 1		. . . .	. . . .
3	Hubbard . . m.		"	Bad.

DATES AND CHARACTER OF OBSERVATIONS.

WASHINGTON.			SANTIAGO.	
Date.	Observer.	Remarks.	Observer.	Remarks.
Sept. 4	Hesse . . . . m. 1		Schumacher.	Image unquiet.
5	Hubbard . . . m.	Night peculiarly favorable.	"	Good; image tranquil.
6	Hesse . . . . m. 1		. . . .	. . . .
7	. . . .	. . . .	"	Good; well defined.
8	Harkness . . . m.		"	Bad; obscured by clouds.
13	Hesse . . . . m. 1		"	Oscillating.
14	. . . .	. . . .	"	Oscillating.
15	Harkness . . . m.	Stars somewhat unsteady.		
16	. . . .	. . . .	"	Tolerable; obscured by clouds.
17	. . . .	. . . .	"	Bad.
18	Hesse . . . m. 1	A good night.		
19	. . . .	. . . .	"	Oscillating.
20	. . . .	. . . .	"	Good.
21	Hubbard . . . m.	Stars very unsteady.	. . . .	. . . .
22	Hubbard . . . m.		"	Bad.
23	Hesse . . . . m. 1		"	Image unquiet.
24	Hubbard . . . m. 1. 2		"	Good; except δ Piscium.
25	Hesse . . . . m. 1		"	Lalande 670 unquiet.
26	Harkness . . . m. 1. 2		"	No remark.
27	. . . .	. . . .	"	Well defined only at times.
28	Hubbard . . . m. 1. 2		"	Good.
29	Hubbard . . . m. 1. 2		. . . .	. . . .
30	. . . .	. . . .	"	Planet confused; stars good.
Oct. 2	Hesse . . . . m. 1. 2		"	Imperfect observation; clouds.
3	Harkness . . . m. 1. 2		. . . .	. . . .
4	. . . .	. . . .	"	Interrupted by clouds.
5	. . . .	. . . .	"	Clouds, but tolerably good.
6	Harkness . . . m. 1. 2		"	No remark.
7	Hesse . . . . m. 1. 2		"	Very unquiet; not satisfactory.
8	Harkness . . . m. 1. 2	Planet blurred and unsteady.	"	Very unquiet; clouds.
9	Hesse . . . m. 1		. . . .	. . . .
10	. . . .	. . . .	"	No remark.
12	. . . .	. . . .	"	Not satisfactory.
15	. . . .	. . . .	"	Good; except Lalande 261.
17	Harkness . . . m. 1. 2	Badly defined and unsteady.	. . . .	. . . .
18	Hesse . . . . m. 1. 2		. . . .	. . . .
19	. . . .	. . . .	"	Very good; except Lalande 670.
20	Harkness . . . m. 1. 2		"	Good; except 29 Ceti.
22	Harkness . . . m. 1. 2		. . . .	. . . .
23	Hesse . . . . m. 1. 2	Night bad.	"	Good; two stars not good.
24	Harkness . . . m. 1. 2	Planet not well defined.	"	Oscillating.
25	. . . .	. . . .	"	No remark.
27	. . . .	. . . .	"	Very good.
28	Hubbard . . . m. 1. 2	Very unsteady.	. . . .	. . . .
29	Harkness . . . m. 1. 2	Planet not well defined.	"	Planet unsteady; 4 good, 3 bad stars.
30	Hesse . . . . m. 1. 2		"	Planet unsteady; 670 Lalande bad.
31	Hubbard . . . m. 1. 2		"	Planet unquiet; 29 Ceti bad.
Nov. 1	. . . .	. . . .	"	Unquiet.
2	Hesse . . . . m. 1. 2		"	Good; except 670 Lalande and 29 Ceti.
3	Hesse . . . . m. 1. 2		"	One star not good.

The results of the Washington Observations have been taken without recomputation from the volume of 1862; those of the Santiago Observations it was necessary to compute here, in doing which the several instrumental corrections were applied according to the data given by Dr. Moesta, in the volume heretofore quoted.

OBSERVATIONS AND RESULTING DECLINATIONS OF MARS.

Date.	Name of object.	WASHINGTON.				SANTIAGO.			
		Mean of readings.	Inst'l corrections.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
1862.		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
Aug. 25	26 Ceti	38 15 0.88	− 9.10	+ 45.26	+ 0 38 2.21	10 55 39.49	+ 0.34	+ 38.40	+0 38 2.12
	Mars	35 49 59.47	+ 22.37	41.47	3 2 36.04	8 30 42.60	10.16	41.96	3 2 56.31
	ν Piscium	34 5 0.58	+ 16.33	38.38	4 47 43.46	6 45 48.09	16.75	44.69	4 47 43.40
	ξ Piscium	36 24 59.25	− 2 46.86	42.31	2 30 44.55	9 2 45.75	16.76	41.13	2 30 42.17
	Lalande 3298	35 54 59.75	− 2 11.84	+ 41.56	+ 3 0 9.78	8 33 37.67	+ 0.00	+ 41.87	+3 0 7.75
28	δ Piscium	32 4 56.62	− 2 21.70	+ 35.15	+ 6 50 29.18	4 43 25.40	+ 0.00	+ 48.04	+6 50 25.64
	26 Ceti	38 14 55.05	0 4.86	44.28	0 38 4.78	10 55 38.48	0.15	38.34	0 38 3.72
	80 Piscium	33 59 56.90	− 2 31.28	37.84	4 55 35.75	6 37 57.00	19.08	44.87	4 55 30.24
	Mars	35 44 56.23	+ 1 26.16	40.50	3 6 36.36	8 26 40.95	8.95	42.01	3 6 56.87
	μ Piscium	33 24 56.78	1 45.77	37.13	5 26 19.57	6 7 30.39	0.52	45.66	5 26 17.75
	ν Piscium	34 4 58.58	+ 0 17.60	37.97	4 47 45.10	6 45 48.84	16.19	44.61	4 47 42.58
	ξ Piscium	36 24 57.28	− 2 45.41	41.46	2 30 45.92	9 2 43.91	17.03	41.06	2 30 43.12
	Lalande 3298	35 54 56.38	− 2 9.48	+ 40.70	+ 3 0 11.65	8 33 34.85	+ 0.07	+ 41.80	+3 00 9.88
Sept. 5	δ Piscium	32 5 0.87	− 2 26.35	+ 35.76	+ 6 50 28.97	4 43 42.48	− 17.01	+ 47.79	+6 50 26.48
	20 Ceti	40 45 1.13	+ 0 59.13	49.22	− 1 53 10.23	13 26 52.04	+ 0.26	34.65	−1 53 13.93
	26 Ceti	38 15 1.38	− 0 12.29	45.06	+ 0 38 5.10	10 55 57.69	− 15.06	38.16	+0 37 59.69
	Mars	35 50 0.28	− 3 23.47	41.12	3 6 21.22	8 27 11.65	9.75	41.82	3 6 42.20
	μ Piscium	33 25 1.50	+ 1 40.44	37.99	5 26 19.52	6 7 49.79	− 15.22	45.47	5 26 15.08
	ν Piscium	34 5 0.60	+ 0 16.50	38.74	4 47 44.41	6 46 7.37	+ 0.03	44.44	4 47 41.20
	Lalande 3298	35 54 59.65	− 2 12.15	41.01	3 0 10.34	8 33 54.08	− 17.11	41.65	3 0 8.84
	ξ Piscium	36 25 0.10	− 2 47.13	+ 42.16	+ 2 30 44.12	9 3 3.12	− 0.03	+ 40.91	+2 30 41.98
24	δ Piscium	32 5 0.45	− 2 29.07	+ 36.04	+ 6 50 31.83	4 43 25.92	+ 0.03	+ 47.17	+6 50 28.26
	20 Ceti	40 45 1.15	+ 0 57.63	49.63	− 1 53 9.16	13 26 34.69	19.72	34.17	−1 53 13.20
	26 Ceti	38 15 0.05	− 0 11.08	45.43	+ 0 38 4.85	10 55 22.35	18.50	37.62	+0 38 3.81
	Mars	36 40 1.28	− 0 12.75	42.93	2 13 7.79	9 20 2.51	+ 4.81	39.89	2 13 30.97
	μ Piscium	33 25 0.67	+ 1 39.11	38.13	5 26 21.34	6 7 32.75	− 0.02	44.74	5 26 19.05
	ν Piscium	34 5 0.28	+ 0 15.72	39.07	4 47 44.18	6 45 48.27	+ 16.72	43.72	4 47 45.77
	Lalande 3298	35 54 58.78	− 2 12.29	41.78	3 0 10.98	8 33 37.56	0.04	40.96	3 0 10.40
	ξ Piscium	36 24 58.45	− 2 46.63	+ 42.54	+ 2 30 44.89	9 2 45.10	+ 19.13	+ 40.22	+2 30 43.03
25	Lalande 670	34 45 1.53	+ 1 38.83	+ 40.61	+ 4 6 18.28	7 27 53.71	− 18.22	+ 42.32	+4 6 14.05
	15 Ceti	40 10 1.70	− 1 55.67	49.29	− 1 15 16.07	12 49 0.83	+ 0.14	34.67	−1 15 18.98
	60 Piscium	32 55 2.40	1 44.33	37.83	+ 5 59 43.35	5 34 30.08	− 18.33	45.30	+5 59 40.47
	Mars	36 45 2.02	1 9.71	43.67	2 9 3.27	9 24 25.51	13.48	39.48	2 9 25.93
	89 Piscium	36 0 2.55	− 0 47.79	42.51	+ 2 53 41.98	8 40 26.67	19.43	40.56	+2 53 40.54
	43 Ceti	40 0 3.38	+ 2 38.09	49.19	− 1 9 51.41	12 43 36.67	0.17	34.85	−1 9 54.43
	Lalande 2614	40 0 3.38	− 0 41.27	+ 49.10	− 1 6 31.96	12 40 33.94	− 17.23	+ 34.94	−1 6 34.55
26	Lalande 670	34 45 1.20	+ 1 41.06	+ 40.55	+ 4 6 16.46	7 27 35.85	+ 0.03	+ 42.51	+4 6 14.88
	15 Ceti	40 10 1.75	− 1 55.91	49.20	− 1 15 15.79	12 48 41.63	18.47	34.85	−1 15 17.00
	60 Piscium	32 55 1.20	− 1 43.09	37.77	+ 5 59 43.37	5 34 12.13	0.02	45.53	+5 59 41.63
	20 Ceti	40 45 0.20	+ 0 58.22	50.35	− 1 53 9.52	13 26 33.52	18.47	34.02	−1 53 9.72
	Mars	36 49 59.62	− 1 58.76	43.76	+ 2 4 54.63	9 28 15.43	4.73	39.54	+2 5 18.83
	89 Piscium	36 0 0.25	− 0 44.84	42.46	+ 2 53 41.38	8 40 8.77	0.01	40.73	+2 53 40.20
	43 Ceti	40 0 2.02	+ 2 39.16	49.13	− 1 9 51.06	12 43 16.89	18.98	34.99	−1 9 52.63
	μ Piscium	33 25 1.67	+ 1 37.82	+ 38.63	+ 5 26 21.02	6 7 13.71	+ 19.86	+ 44.65	+5 26 19.33
28	60 Piscium	32 54 59.42	− 1 39.89	+ 36.77	+ 5 59 42.95	5 34 12.61	+ 0.01	+ 45.65	+5 59 41.30
	20 Ceti	40 45 1.07	+ 1 0.03	48.96	− 1 53 10.81	13 26 36.18	18.53	34.12	−1 53 12.31
	Mars	37 0 0.82	− 3 42.06	42.78	+ 1 56 37.71	9 36 30.78	4.31	39.48	+1 57 3.92
	89 Piscium	35 59 59.20	− 0 42.25	41.32	+ 2 53 40.98	8 40 8.77	0.03	40.90	+2 53 40.37
	43 Ceti	39 59 59.67	+ 2 43.25	47.82	− 1 9 51.49	12 43 18.29	19.94	35.13	−1 9 54.83
	μ Piscium	33 25 0.33	− 1 40.33	+ 37.60	+ 5 26 20.99	6 7 15.42	+ 18.20	+ 44.84	+5 26 19.49
Oct. 6	Lalande 670	34 45 1.92	+ 1 38.67	+ 39.87	+ 4 6 18.79	7 27 34.46	+ 0.13	+ 43.36	+4 6 14.38
	15 Ceti	40 10 3.57	− 1 58.76	48.35	− 1 15 13.91	12 48 41.04	18.43	35.56	−1 15 18.30
	60 Piscium	32 55 3.67	− 1 46.76	37.08	+ 5 59 45.26	5 34 9.86	0.01	46.46	+5 59 42.20
	20 Ceti	40 45 4.25	+ 0 55.29	49.41	− 1 53 9.70	13 26 33.63	17.89	34.72	−1 53 11.19
	Mars	37 30 2.37	− 2 27.48	43.91	+ 1 25 20.45	10 7 48.97	+ 5.33	39.42	+1 25 43.19
	89 Piscium	36 0 2.98	− 0 48.44	41.62	2 53 43.09	8 40 8.10	− 0.01	41.66	2 53 39.18
	μ Piscium	33 25 3.73	+ 1 36.51	+ 37.86	+ 5 26 21.15	6 7 12.51	+ 18.37	+ 45.70	+5 26 20.43
20	Lalande 47374	42 10 2.82	− 4 49.17	+ 53.58	− 3 12 27.98	14 53 15.39	− 18.37	+ 31.58	−3 19 15.15
	Lalande 261	37 55 1.92	+ 2 2.89	46.30	+ 0 55 48.14	10 37 59.85	+ 0.28	37.24	+0 55 47.40
	44 Piscium	37 39 59.15	1 53.57	45.89	1 11 0.64	10 23 4.66	− 18.66	37.61	1 11 1.90
	Lalande 670	34 44 59.87	+ 1 40.51	41.25	4 6 17.62	7 27 37.09	+ 0.10	41.87	4 6 14.97
	Mars	38 0 0.52	− 0 42.57	+ 46.40	+ 0 53 34.90	10 39 58.97	− 9.57	+ 37.24	+0 53 56.73

OBSERVATIONS AND RESULTING DECLINATIONS OF MARS.

Date.	Name of object.	WASHINGTON.				SANTIAGO.			
		Mean of readings.	Inst'l corrections.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
1862. Oct. 20	Lalande 1299	34 19 59.70	— 1 43.66	+ 40.55	+ 4 34 42.66	6 59 29.17	— 18.45	+ 42.71	+4 34 42.28
	26 Ceti . . .	38 15 0.33	— 0 12.53	+ 46.83	+ 0 38 4.62	10 56 0.57	— 19.72	+ 36.59	+0 38 6.93
23	Lalande 47374	42 10 5.92	+ 1 52.62	+ 54.42	— 3 19 13.71	14 52 56.46	— 0.16	+ 31.77	—3 19 16.03
	Lalande 261	37 55 5.05	1 59.82	46.82	+ 0 55 47.46	10 37 41.47	+ 18.26	37.49	+0 55 46.57
	44 Piscium . .	37 40 6.37	+ 1 44.62	46.40	1 11 1.86	10 22 46.41	0.09	37.87	1 11 0.19
	Mars . .	38 0 6.32	— 0 3.37	46.94	0 52 49.36	10 40 28.55	+ 9.22	37.50	0 53 8.91
	Lalande 1299	34 20 5.80	— 1 50.83	41.02	+ 4 34 43.26	6 59 12.07	— 0.35	42.96	+4 34 40.06
	20 Ceti . . .	40 45 5.83	+ 0 53.72	51.82	— 1 53 12.11	13 26 35.42	+ 18.33	33.78	—1 53 11.15
	26 Ceti . . .	38 15 4.90	— 0 18.43	+ 47.40	+ 0 38 5.38	10 55 42.90	— 0.26	+ 37.25	+0 38 3.43
Nov. 2	Lalande 47374	42 9 59.23	+ 2 3.67	+ 51.31	— 3 19 14.96	14 52 58.32	+ 0.05	+ 31.76	—3 19 17.09
	Lalande 261	37 54 57.97	2 10.65	44.14	+ 0 55 46.49	10 37 42.73	18.32	37.46	+0 55 45.93
	44 Piscium . .	37 39 58.43	+ 1 56.40	43.74	1 11 0.68	10 22 47.56	0.08	37.83	1 10 59.71
	Mars . .	37 44 59.73	— 0 33.78	43.78	1 8 29.52	10 24 52.66	+ 12.90	37.82	1 8 48.28
	Lalande 1299	34 19 58.78	— 1 40.81	38.62	+ 4 34 42.66	6 59 9.56	— 0.24	42.91	+4 34 43.11
	20 Ceti . . .	40 44 59.42	+ 1 1.46	48.79	— 1 53 10.42	13 26 36.59	+ 18.26	33.74	—1 53 11.59
	26 Ceti . . .	38 14 59.57	— 0 8.98	+ 44.62	+ 0 38 4.04	10 55 44.11	— 0.46	+ 37.18	+0 38 3.05
3	Lalande 47374	42 10 3.25	+ 1 57.79	+ 53.69	— 3 19 15.48	14 53 15.71	— 18.28	+ 31.73	—3 19 16.86
	Lalande 261	37 55 2.27	2 3.64	46.20	+ 0 55 47.09	10 38 0.81	0.17	37.44	+0 55 45.64
	44 Piscium . .	37 40 2.30	1 50.39	45.80	1 11 0.76	10 23 5.38	— 18.89	37.79	1 11 0.14
	Lalande 670	34 45 1.27	1 38.93	41.16	4 6 17.89	7 27 37.66	+ 0.11	42.08	4 6 13.37
	Mars . .	37 40 0.28	+ 1 17.21	35.51	1 11 35.96	10 22 5.38	— 5.47	37.86	1 11 53.67
	Lalande 1299	34 19 59.92	— 1 44.39	40.46	+ 4 34 43.26	6 59 28.61	19.55	42.87	+4 34 42.65
	20 Ceti . . .	40 45 1.32	+ 0 56.72	51.12	— 1 53 9.91	13 26 56.97	0.13	33.69	—1 53 14.35
	26 Ceti . . .	38 15 1.10	— 0 12.73	+ 46.75	+ 0 38 4.13	10 56 0.53	— 18.24	+ 37.14	+0 38 3.69

The preceding selected observations afford data from which the parallax of the planet and that of the sun at the several dates were computed, as follows:

Let Π = the parallactic angle.

Π' = the same angle deduced from the declinations of Mars observed at two stations.

p = the horizontal parallax of Mars at the time of observation.

π = the horizontal parallax of the sun at the mean distance.

κ = the chord of the earth between the latitude of Washington and Santiago in parts of the equatorial radius of the earth.

N = the declination of a perpendicular to this chord.

d = the length on this perpendicular from the centre of the earth to the chord (κ) in parts of the mean distance between the earth and sun.

Δ = the distance between the earth and Mars at the time of observation.

δ = the declination of Mars.

E = the probable error of the mean value of Π.

$$\text{Then } p = \frac{\Pi}{\kappa \cos (N - \delta)}$$

$$\pi = \frac{\Pi (\Delta - d)}{\kappa \cos (N - \delta)}$$

The following constants have been used, φ, φ', and ρ, having their usual signification:

	φ	φ'	$\varphi - \varphi'$	log. ρ
For Washington	+ 38° 53′ 39″.25	+ 38 42 24.70	11′ 14″.55	9.9994301
Santiago........	— 33° 26′ 42″.00	— 33 16 7.58	10′ 34″.42	9.9995614

Diff. longitude between Santiago and Washington 25*m*. 28.6*s*. = 0.01770 of a day.

Log. κ = 0.0696175.

N = + 2° 43′ 51″.50.

d = 0.0000339.

The values of Δ given in the following table and used in the computations have been interpolated from the Ephemeris of Dr. Winnecke.

Date.	M. T. Transit.	Log. Δ	Log. Δ—*d*.	Date.	M. T. Transit.	Log Δ.	Log. Δ—*d*.
	h. m. s.				h. m. s.		
Aug. 25	14 59 36	9.679849	9.679818	Sept. 28	12 29 12	9.608279	9.608243
28	14 48 48	9.669629	9.669597	Oct. 6	11 48 00	9.613682	9.613646
Sept. 3	14 15 30	9.650600	9.650566	7	11 42 54	9.615243	9.615207
4	14 21 30	9.647645	9.647612	8	11 37 42	9.616828	9.616793
5	14 17 24	9.644831	9.644797	20	10 37 54	9.647408	9.647376
8	14 4 36	9.636592	9.636558	23	10 23 48	9.657967	9.657935
13	13 42 30	9.624784	9.624749	24	10 19 12	9.661701	9.661670
22	12 59 30	9.610968	9.610933	29	9 56 42	9.681746	9.681715
23	12 54 36	9.610130	9.610094	30	9 52 18	9.685991	9.685961
24	12 49 36	9.609446	9.609409	31	9 48 00	9.690308	9.690278
25	12 44 30	9.608914	9.608877	Nov. 2	9 39 42	9.699125	9.699095
26	12 39 24	9.608529	9.608492	3	9 35 36	9.703623	9.703592

RESULTS.

Date.	Star of comparison.	Mars—Star.		Π	Π¹	*p*.	π	*E*.
		At Washington.	At Santiago.					
1862.		° ′ ″	° ′ ″	″	″	″	″	″
Aug. 25	26 Ceti	2 24 33.83	2 24 54.19	20.36				
	ν Piscium	1 45 7.42	1 44 47.09	20.33				
	ξ Piscium	0 31 51.49	0 32 14.14	22.65		18.239	8.726	0.417
	Lalande 3298 ...	0 2 26.26	0 2 48.56	22.30				
	Mean	....	....	21.41	20.28			
28	δ Piscium	3 43 52.80	3 43 28.67	24.13				
	26 Ceti	2 28 31.60	2 28 54.16	22.56				
	80 Piscium	1 48 59.37	1 48 33.37	26.00				
	μ Piscium	2 19 43.19	2 19 20.88	22.31		19.772	9.240	0.358
	ν Piscium	1 41 8.72	1 40 45.71	23.01				
	ξ Piscium	0 35 50.46	0 36 13.75	22.29				
	Lalande 3298 ...	0 6 24.79	0 6 46.98	22.19				
	Mean	....	....	23.21	20.51			
Sept. 5	δ Piscium	3 44 7.75	3 43 44.28	23.47				
	20 Ceti	4 59 31.45	4 59 55.69	24.22				
	26 Ceti	2 28 16.12	2 28 42.51	26.39				
	μ Piscium	2 19 58.30	2 19 32.88	25.42		20.480	9.039	0.357
	ν Piscium	1 41 22.19	1 40 59.00	23.19				
	Lalande 3298 ...	0 6 10.88	0 6 33.36	22.48				
	ξ Piscium	0 35 37.10	0 36 0.22	23.12				
	Mean	....	....	24.04	20.98			
24	δ Piscium	4 37 24.04	4 36 57.29	26.75				
	20 Ceti	4 6 16.95	4 6 44.17	27.22				
	26 Ceti	1 35 2.94	1 35 27.16	24.22				
	μ Piscium	3 13 13.55	3 12 48.08	25.47		21.179	8.616	0.486
	ν Piscium	2 34 36.39	2 34 14.80	21.59				
	Lalande 3298 ...	0 47 3.19	0 46 39.43	23.76				
	ξ Piscium	0 17 37.10	0 17 12.06	25.04				
	Mean	....	....	24.86	23.18			

RESULTS.

Date.	Star of comparison.	MARS—STAR.		Π	Π^1	p	π	*E.*
		At Washington.	At Santiago.					
1862.		° ′ ″	° ′ ″	″	″	″	″	″
Sept. 25	Lalande 670	1 57 15.01	1 56 45.12	26.89		21.724	8.838	0.245
	15 Ceti	3 24 19.34	3 24 44.91	25.57				
	60 Piscium	3 50 40.08	3 50 14.54	25.54				
	89 Piscium	0 44 38.71	0 44 14.61	24.10				
	43 Ceti	3 18 54.68	3 19 20.36	25.68				
	Lalande 2614	3 15 35.23	3 16 0.48	25.25				
	Mean	- - - - -	- - - - -	25.50	22.66			
26	Lalande 670	2 1 21.83	2 0 56.05	25.78		21.917	8.898	0.148
	15 Ceti	3 20 10.42	3 20 35.83	25.41				
	60 Piscium	3 54 48.74	3 54 22.80	25.94				
	20 Ceti	3 58 4.15	3 58 28.55	24.40				
	89 Piscium	0 48 46.75	0 48 21.37	25.38				
	43 Ceti	3 14 45.69	3 15 11.46	25.77				
	μ Piscium	3 21 26.39	3 21 0.50	25.89				
	Mean	- - - - -	- - - - -	25.71	24.20			
28	60 Piscium	4 3 5.24	4 2 37.38	27.86		23.795	9.654	0.300
	20 Ceti	3 49 48.52	3 50 16.23	27.71				
	89 Piscium	0 57 3.27	0 56 36.45	26.82				
	43 Ceti	3 6 29.20	3 6 58.75	29.55				
	μ Piscium	3 29 43.28	3 29 15.57	27.71				
	Mean	- - - - -	- - - - -	27.93	26.21			
Oct. 6	Lalande 670	2 40 58.34	2 40 31.19	27.15		21.913	9.002	0.367
	15 Ceti	2 40 34.36	2 41 1.49	27.13				
	60 Piscium	4 34 24.81	4 33 59.01	25.80				
	20 Ceti	3 18 30.15	3 18 54.38	24.25				
	89 Piscium	1 28 22.64	1 27 55.99	26.65				
	μ Piscium	4 1 0.70	4 0 37.24	23.46				
	Mean	- - - -	- - - - -	25.74	22.74			
20	Lalande 261	0 2 13.24	0 1 50.67	22.57		18.794	8.343	0.501
	44 Piscium	0 17 25.74	0 17 5.17	20.57				
	Lalande 670	3 12 42.72	3 12 18.24	24.48				
	Lalande 1299	3 41 7.76	3 40 45.55	22.21				
	26 Ceti	0 15 30.28	0 15 50.70	20.42				
	Mean	- - - - -	- - - - -	22.05	21.83			
23	Lalande 47374	4 12 3.07	4 12 24.94	21.87		18.393	8.361	0.246
	Lalande 261	0 2 58.20	0 2 37.66	20.54				
	44 Piscium	0 18 12.50	0 17 51.28	21.22				
	Lalande 1299	3 41 53.90	3 41 31.15	22.75				
	20 Ceti	2 46 01.48	2 46 20.06					
	26 Ceti	0 14 43.98	0 15 5.48	21.51				
	Mean	- - - - -	- - - - -	21.58	19.55			
Nov. 2	Lalande 47374	4 27 44.48	4 28 5.37	20.89		16.610	8.307	0.236
	Lalande 261	0 12 43.03	0 13 2.35	19.32				
	44 Piscium	0 2 31.16	0 2 11.43	19.73				
	Lalande 1299	3 26 13.14	3 25 54.83	18.31				
	20 Ceti	3 1 39.94	3 1 59.87	19.93				
	26 Ceti	0 30 25.48	0 30 45.23	19.75				
	Mean	- - - - -	- - - - -	19.49	18.76			
3	Lalande 47374	4 30 51.44	4 31 10.53	19.09		16.728	8.454	0.456
	Lalande 261	0 15 48.87	0 16 8.03	19.16				
	44 Piscium	0 0 35.20	0 0 53.53	18.33				
	Lalande 670	2 54 41.93	2 54 19.70	22.23				
	Lalande 1299	3 23 7.30	3 22 48.98	18.32				
	20 Ceti	3 4 45.87	3 5 8.02	22.15				
	26 Ceti	0 33 31.83	0 33 49.98	18.15				
	Mean	- - - - -	- - - - -	19.63	17.71			

For more immediate comparison the mean values for the several days are grouped in the following table:

	II.	II^1.	II–II^1.	*p*.	π.	E.
Aug. 25	21.41	20.28	+ 1.13	18.239	8.726	0.417
28	23.21	20.51	2.70	19.772	9.240	0.358
Sept. 5	24.04	20.98	3.06	20.480	9.039	0.357
24	24.86	23.18	1.68	21.179	8.616	0.486
25	25.50	22.66	2.84	21.724	8.838	0.245
26	25.71	24.20	1.51	21.917	8.898	0.148
28	27.93	26.21	1.72	23.975	9.654	0.300
Oct. 6	25.74	22.74	3.00	21.913	9.002	0.367
20	22.05	21.83	0.22	18.794	8.343	0.501
23	21.58	19.55	2.03	18.393	8.361	0.246
Nov. 2	19.49	18.76	0.73	16.610	8.307	0.236
3	19.63	17.71	+ 1.92	16.728	8.454	0.456

And for the purpose of combining them to a final result a weight has been assigned each, in which $w = \frac{1}{E\,\Delta^2}$, Δ representing, as before, the distance of the planet from the earth at the time of observation.

FINAL RESULTS.

	log. π.	log. $\frac{1}{E\,\Delta^2}$	log. π w.	π w.
Aug. 25	0.94082	1.02016	1.96098	91.407
28	0.96566	1.10686	2.07252	118.173
Sept. 5	0.95612	1.15767	2.11379	129.954
24	0.93532	1.09447	2.02979	107.100
25	0.94635	1.39300	2.33935	218.449
26	0.94927	1.61268	2.56195	364.712
28	0.98474	1.30632	2.29106	195.461
Oct. 6	0.95435	1.20797	2.16332	145.319
20	0.92139	1.00534	1.92673	84.481
23	0.92259	1.29313	2.21572	164.331
Nov. 2	0.91949	1.22884	2.14833	140.712
3	0.92705	1.93378	1.86083	72.582
				log. π = 0.9461588

or the value of the solar parallax from twelve selected corresponding observations is 8″.8340.

The data and computed results from corresponding observations on the other dates specified are given in the two tables which follow:

Date.	Name of object.	WASHINGTON.				SANTIAGO.			
		Mean of readings.	Inst'l corrections.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
1862.		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
Sept. 3	δ Piscium . .	30 5 0.67	− 2 25.87	+ 36.54	+ 6 50 27.91	4 43 43.59	− 17.41	+ 47.86	+6 50 26.29
	20 Ceti . . .	40 45 4.42	+ 0 56.56	50.28	− 1 53 11.51	13 26 51.56	+ 0.11	34.71	−1 53 12.35
	26 Ceti . . .	38 15 2.85	− 0 13.74	46.01	+ 0 38 4.13	10 55 57.44	− 18.01	38.24	+0 38 3.43
	80 Piscium . .	34 0 2.23	− 2 38.77	39.32	4 55 36.47	6 38 12.66	+ 0.15	44.75	4 55 36.55
	Mars . .	35 45 1.35	+ 0 5.61	42.04	3 7 50.25	8 25 42.92	− 9.70	41.96	3 8 12.27
	ν Piscium . .	34 5 1.17	+ 0 14.56	39.56	4 47 43.96	6 46 7.76	+ 0.01	44.58	4 47 41.42
	Lalande 3298	35 54 59.78	− 2 13.01	42.31	3 0 10.17	8 33 55.42	− 17.07	41.82	3 0 8.08
	ξ Piscium . .	36 25 0.85	− 2 49.41	+ 43.07	+ 2 30 44.74	9 3 2.62	− 0.20	+ 41.07	+2 30 43.26

Date.	Name of object.	WASHINGTON.				SANTIAGO.			
		Mean of readings.	Inst'l corrections.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
1862. Sept. 4	δ Piscium . .	32 4 59.13	— 2 24.01	+ 36.06	+ 6 50 28.07	4 43 23.94	— 0.06	+ 47.62	+6 50 28.79
	20 Ceti . . .	40 45 1.80	+ 0 58.16	49.66	— 1 53 10.37	13 26 33.84	+ 19.43	34.53	—1 53 13.69
	26 Ceti . . .	38 15 1.90	— 0 11.54	45.44	+ 0 38 3.45	10 55 40.74	0.15	38.04	+0 38 2.29
	80 Piscium . .	34 0 1.95	— 2 37.14	38.83	4 55 35.61	6 37 57.86	18.82	44.52	4 55 32.89
	Mars . .	35 45 1.68	+ 0 42.33	41.55	3 7 13.69	8 26 2.71	7.42	41.73	3 7 35.07
	μ Piscium . .	33 25 1.40	1 39.67	38.10	5 26 20.08	6 7 31.15	0.55	45.36	5 26 18.71
	ν Piscium . .	34 5 1.10	+ 0 15.52	39.06	4 47 43.57	6 45 49.26	16.30	44.34	4 47 43.83
	Lalande 3298	35 55 1.20	— 2 13.31	41.75	3 0 9.61	8 33 36.94	0.06	41.57	3 0 9.62
	ξ Piscium . .	36 25 0.47	— 2 48.51	+ 42.51	+ 2 30 44.78	9 2 44.59	+ 18.62	+ 40.83	+2 30 43.65
8	δ Piscium . .	32 4 58.03	— 2 22.65	+ 35.05	+ 6 50 28.82	4 43 43.03	— 18.32	+ 47.23	+6 50 28.08
	26 Ceti . . .	38 14 58.02	0 6.29	44.13	0 38 3.39	10 55 57.97	— 19.54	37.72	0 38 4.85
	80 Piscium . .	33 59 56.15	— 2 30.77	37.72	4 55 36.15	6 38 14.96	+ 0.17	44.15	4 55 34.58
	Mars . .	35 49 57.60	+ 0 36.28	40.46	3 2 24.51	8 31 6.71	— 10.65	41.28	3 2 47.30
	μ Piscium . .	33 25 0.55	1 41.70	37.02	5 26 19.98	6 7 50.64	— 17.30	43.00	5 26 15.22
	ν Piscium . .	34 5 0.66	+ 0 17.86	37.94	4 47 42.79	6 46 7.26	+ 0.02	43.99	4 47 42.27
	Lalande 3298	35 55 1.17	— 2 12.89	40.54	3 0 10.43	8 33 53.67	— 18.24	41.25	3 0 9.38
	ξ Piscium . .	36 25 1.95	— 2 48.22	+ 41.28	+ 2 30 44.24	9 3 1.88	+ 0.02	+ 40.50	+2 30 44.16
13	δ Piscium . .	32 0 2.07	+ 2 33.59	+ 36.16	+ 6 50 27.43	4 43 27.09	— 1.10	+ 47.32	+6 50 27.96
	20 Ceti . . .	40 45 0.70	+ 0 59.97	49.78	— 1 53 11.20	13 26 32.84	+ 19.97	34.32	—1 53 11.91
	26 Ceti . . .	38 15 0.12	— 0 10.49	45.53	+ 0 38 3.09	10 55 41.40	— 1.19	37.81	+0 38 4.23
	80 Piscium . .	34 0 0.28	2 35.70	38.91	4 55 35.76	6 37 57.64	+ 17.00	44.23	4 55 36.22
	Mars . .	36 4 58.58	— 3 33.05	42.01	2 51 32.21	8 41 40.79	5.66	41.06	2 51 55.58
	μ Piscium . .	33 24 59.55	+ 1 41.69	38.17	5 26 19.84	6 7 33.22	1.69	45.06	5 26 16.78
	ν Piscium . .	34 4 58.73	+ 0 18.50	39.11	4 47 42.91	6 45 51.01	16.77	44.04	4 47 42.89
	Lalande 3298	35 54 59.45	— 2 12.22	41.80	3 0 10.22	8 33 39.77	1.16	41.28	3 0 6.98
	ξ Piscium . .	36 24 59.88	— 2 48.26	+ 42.56	+ 2 30 45.07	9 2 45.62	+ 16.97	+ 40.55	+2·30 44.59
22	δ Piscium . .	32 5 0.87	— 2 27.24	+ 35.96	+ 6 50 29.66	4 43 25.53	+ 0.07	+ 47.07	+6 50 27.64
	20 Ceti . . .	40 45 0.93	+ 0 58.47	49.53	— 1 53 9.68	13 26 34.09	20.21	34.14	—1 53 13.99
	80 Piscium . .	34 0 0.65	— 2 56.24	38.78	+ 4 55 36.06	6 37 57.42	19.79	44.03	+3 55 32.99
	Mars . .	36 29 59.57	+ 1 49.81	42.69	2 21 7.18	9 12 3.02	5.79	40.13	2 21 29.17
	ν Piscium . .	34 5 1.15	+ 0 14.60	39.08	4 47 44.42	6 45 50.00	15.85	43.94	4 47 43.26
	Lalande 3298	35 55 0.72	— 2 14.83	+ 41.79	+ 3 0 11.51	8 33 38.84	+ 0.13	+ 41.20	+3 0 8.40
23	δ Piscium . .	32 5 0.50	— 2 28.10	+ 35.75	+ 6 50 31.10	4 43 44.56	— 19.03	+ 46.80	+6 50 28.10
	20 Ceti . . .	40 45 1.20	+ 0 58.81	49.21	— 1 53 9.97	13 26 51.98	+ 0.10	33.94	—1 53 11.31
	26 Ceti . . .	38 15 1.97	— 0 12.36	45.00	+ 0 38 4.64	10 55 59.83	+ 18.61	37.39	+0 38 3.00
	Mars . .	36 35 1.03	+ 0 45.96	42.39	2 17 9.87	9 16 19.09	13.37	39.77	2 17 32.40
	μ Piscium . .	33 25 1.22	1 39.96	37.71	5 26 20.36	6 7 50.25	18.06	44.60	5 26 19.24
	ν Piscium . .	34 5 0.93	+ 0 14.53	38.65	4 47 45.14	6 46 7.08	0.01	43.61	4 47 43.37
	Lalande 3298	35 55 0.52	— 2 14.11	41.31	3 0 11.53	8 33 56.79	18.70	40.88	3 0 9.62
	ξ Piscium . .	36 24 59.03	— 2 47.02	+ 42.08	+ 2 30 45.16	9 3 2.69	+ 0.04	+ 40.16	+2 30 44.34
Oct. 7	Lalande 261	37 54 56.80	+ 2 11.58	+ 43.69	+ 0 55 47.18	10 38 17.19	— 18.20	+ 38.58	+0 55 44.48
	44 Piscium . .	37 39 56.10	1 58.39	43.30	1 11 1.46	10 22 45.05	+ 0.12	38.98	1 10 58.70
	Lalande 670	34 44 56.23	+ 1 46.62	38.92	+ 4 6 17.48	7 27 50.83	— 16.75	43.42	+4 6 14.23
	15 Ceti . . .	40 9 58.97	— 1 49.79	47.23	— 1 15 17.16	12 49 0.22	+ 0.17	35.60	—1 15 19.90
	Mars . .	37 34 56.95	3 51.73	43.02	+ 1 21 51.01	10 11 35.97	— 12.37	39.41	+1 22 13.46
	26 Ceti . . .	38 14 58.90	0 8.16	44.18	0 38 4.33	10 56 0.60	— 16.83	38.37	0 38 1.81
	80 Piscium . .	33 59 59.55	2 35.22	37.75	4 55 37.17	6 38 15.44	+ 0.12	44.94	4 55 34.27
	89 Piscium . .	35 59 59.22	0 43.07	40.71	+ 2 53 42.39	8 40 26.16	— 18.74	41.79	+2 53 39.26
	43 Ceti . . .	40 4 59.65	— 2 14.94	+ 47.10	— 1 9 52.56	12 43 35.09	+ 0.12	+ 35.93	—1 9 54.39
8	Lalande 261	37 55 1.80	+ 2 7.03	+ 43.92	+ 0 55 46.50	10 37 59.82	+ 0.21	+ 38.46	+0 55 44.77
	44 Piscium . .	37 40 1.93	1 53.19	43.53	1 11 0.60	10 22 26.75	18.29	38.83	1 11 0.13
	Lalande 670	34 45 0.78	+ 1 41.25	39.12	+ 4 6 18.10	7 27 34.28	0.21	43.23	+4 6 15.08
	15 Ceti . . .	40 10 1.80	— 1 54.49	47.49	— 1 15 15.55	12 48 41.58	18.39	35.43	—1 15 18.20
	Mars . .	37 35 0.60	0 37.46	43.36	+ 1 18 32.55	10 14 37.96	+ 5.65	39.07	+1 18 54.86
	26 Ceti . . .	38 15 2.58	0 11.60	44.44	0 38 3.83	10 55 44.15	— 0.17	38.10	0 38 0.46
	80 Piscium . .	34 0 3.23	2 38.27	37.98	4 55 36.31	6 37 56.40	+ 20.04	44.62	4 55 34.52
	89 Piscium . .	36 0 1.03	— 0 43.74	+ 40.97	+ 2 53 40.99	8 40 7.85	+ 0.03	+ 41.49	+2 53 39.95
24	Lalande 261	37 54 59.97	+ 2 7.13	+ 45.91	+ 0 55 46.24	10 38 0.23	+ 0.32	+ 37.49	+0 55 46.67
	44 Piscium . .	37 40 0.38	+ 1 53.00	45.49	1 11 0.38	10 23 4.91	— 19.33	38.75	—1 11 2.93
	Mars . .	38 0 0.28	— 0 13.03	45.99	0 53 6.01	10 40 29.40	9.73	38.34	+0 53 27.02
	Lalande 1299	34 20 0.07	— 1 43.47	40.15	+ 4 34 42.50	6 59 29.08	— 17.52	43.89	+4 34 42.06
	20 Ceti . . .	40 45 0.72	+ 0 58.50	50.71	— 1 53 10.68	13 26 56.33	+ 0.01	34.50	—1 53 12.11
	26 Ceti . . .	38 15 0.82	— 0 11.72	46.34	+ 0 38 3.81	10 56 1.06	— 19.47	38.00	+0 38 4.64
	29 Ceti . . .	37 35 0.58	+ 1 9.38	+ 45.28	+ 1 16 44.01	10 17 6.79	— 0.12	+ 38.94	+1 16 42.00

Date.	Name of object.	WASHINGTON.				SANTIAGO.			
		Mean of readings.	Inst'l corrections.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
1862. Oct. 29	Mars . .	37 55 5.50	— 1 3.89	+ 46.41	+ 0 58 53.23	10 34 31.82	+ 11.62	+ 37.76	+0 59 8.57
	Lalande 1299	34 20 5.33	— 1 50.71	40.66	+ 4 34 43.97	6 59 12.23	— 0.17	43.12	+4 34 41.31
	20 Ceti . .	40 44 51.63	+ 1 6.29	51.36	— 1 53 10.03	13 26 37.71	+ 18.28	33.90	—1 53 11.84
	26 Ceti . . .	38 15 5.75	— 0 18.25	46.95	+ 0 38 4.80	10 55 43.30	0.13	37.37	+0 38 4.11
	29 Ceti . .	37 35 5.48	+ 1 2.88	45.87	+ 1 16 45.02	10 16 47.25	+ 19.49	38.30	+1 16 41.81
30	Lalande 47374	42 10 3.07	1 58.54	53.20	— 3 19 15.56	14 53 15.87	— 18.41	31.78	—3 19 16.04
	Lalande 261	38 55 3.20	2 3.50	45.78	+ 0 55 46.77	10 38 2.86	0.00	37.47	+0 55 44.25
	44 Piscium . .	37 40 1.68	1 51.07	45.37	1 11 1.13	10 23 4.57	18.85	37.85	1 11 1.77
	Mars . .	37 50 0.18	+ 2 3.61	45.67	1 0 49.79	10 32 51.58	5.89	37.65	1 1 6.16
	Lalande 1299	34 20 0.17	— 1 43.60	40.07	+ 4 34 42.61	6 59 29.92	— 19.75	42.90	+4 34 42.37
	20 Ceti . . .	40 44 59.58	+ 0 58.93	50.61	— 1 53 9.87	13 26 55.50	+ 0.13	33.73	—1 53 12.26
	26 Ceti . . .	38 14 59.77	— 0 11.10	46.27	+ 0 38 4.31	10 56 2.02	— 19.51	37.17	+0 38 3.30
	29 Ceti . . .	37 34 59.62	+ 1 9.80	45.21	+ 1 16 44.62	10 17 4.65	+ 0.03	38.08	+1 16 43.04
31	Lalande 47374	42 10 2.33	1 58.84	52.64	— 3 19 14.56	14 52 55.83	— 0.04	32.07	—3 19 16.06
	Lalande 261	37 55 1.78	2 5.52	45.25	+ 0 55 46.70	10 37 41.33	+ 17.99	37.82	+0 55 46.16
	44 Piscium . .	37 40 2.83	1 50.89	44.83	1 11 0.70	10 22 44.59	0.15	38.19	1 11 1.11
	Lalande 670	34 45 1.98	+ 1 39.89	40.28	4 6 17.10	7 27 16.69	17.49	42.53	4 6 16.01
	Mars . .	37 50 2.07	— 0 14.28	45.04	1 3 6.42	10 30 14.76	+ 12.65	38.04	1 3 23.41
	Lalande 1299	34 20 2.57	— 1 45.50	39.59	+ 4 34 42.59	6 59 11.03	— 0.30	43.30	+4 34 40.23
	20 Ceti . . .	40 45 2.68	+ 0 57.05	50.02	— 1 53 10.50	13 26 36.98	+ 18.25	34.04	—1 53 13.53
	26 Ceti . . .	38 15 3.18	— 0 14.00	+ 45.78	+ 0 38 4.29	10 55 44.31	— 0.15	+ 37.51	+0 38 1.01

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π¹	p.	π	E.
		At Washington.	At Santiago.					
		° ′ ″	° ′ ″	″	″	″	″	″
1862. Sept. 3	δ Piscium	3 42 37.66	3 42 14.02	23.64		18.875	8.889	0.227
	20 Ceti	5 1 1.76	5 1 24.62	22.86				
	26 Ceti	2 29 46.12	2 30 8.84	22.72				
	80 Piscium	1 47 46.22	1 47 24.28	21.94				
	ν Piscium	1 39 53.71	1 39 29.15	24.56				
	Lalande 3298 . . .	0 7 40.08	0 8 4.19	24.11				
	ξ Piscium	0 37 5.51	0 37 29.01	23.50				
	Mean	. . . .	. . . .	23.50	22.02			
4	δ Piscium	3 43 14.38	3 42 53.72	20.66		19.151	8.507	0.339
	20 Ceti	5 0 24.06	5 0 48.76	24.70				
	26 Ceti	2 29 10.24	2 29 32.87	22.63				
	80 Piscium	1 48 21.92	1 47 57.82	24.10				
	μ Piscium	2 19 6.39	2 18 43.64	22.75				
	ν Piscium	1 40 29.88	2 40 8.76	21.12				
	Lalande 3298 . . .	0 7 4.08	0 7 25.45	21.37				
	ξ Piscium	0 36 28.91	0 36 51.42	22.51				
	Mean	. . . .	. . . .	22.48	21.38			
8	δ Piscium	3 48 3.91	3 47 40.78	23.13		19.909	8.622	0.507
	26 Ceti	2 24 21.52	2 24 42.45	20.53				
	80 Piscium	1 53 11.24	1 52 47.28	23.96				
	μ Piscium	2 23 55.07	2 23 27.92	27.15				
	ν Piscium	1 45 17.88	1 44 54.97	22.91				
	Lalande 3298 . . .	0 2 14.48	0 2 37.92	23.44				
	ξ Piscium	0 31 40.67	0 32 3.14	22.47				
	Mean	. . . .	. . . .	23.37	22.79			

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π'	*p.*	π	*E.*
		At Washington.	At Santiago.					
1862.		° ′ ″	° ′ ″	″	″	″	″	″
Sept. 13	δ Piscium	3 58 55.22	3 58 32.38	22.84		20.616	8.689	0.356
	20 Ceti	4 44 43.41	4 45 7.49	24.08				
	26 Ceti	2 13 28.12	2 13 51.35	23.23				
	80 Piscium	2 4 3.55	2 3 40.64	22.91				
	μ Piscium	2 34 47.63	2 34 21.20	26.43				
	ν Piscium	1 56 10.70	1 55 47.01	23.69				
	Lalande 3298	0 8 38.01	0 8 11.40	26.61				
	ξ Piscium	0 20 47.14	0 21 10.99	23.85				
	Mean	. . . . .	. . . . .	24.20	23.37			
22	δ Piscium	4 29 22.48	4 28 58.47	24.01		21.067	8.601	0.362
	20 Ceti	4 14 16.86	4 14 43.16	26.30				
	80 Piscium	2 34 28.88	2 34 3.82	25.06				
	ν Piscium	2 26 37.24	2 26 14.09	23.15				
	Lalande 3298	0 39 4.39	0 38 39.23	25.16				
	Mean	. . . . .	. . . . .	24.73	21.99			
23	δ Piscium	4 32 21.23	4 32 55.70	25.53		20.608	8.397	0.179
	20 Ceti	4 10 19.84	4 10 43.71	23.87				
	26 Ceti	1 39 5.23	1 39 29.40	24.17				
	μ Piscium	3 9 10.49	3 8 46.84	23.65				
	ν Piscium	2 30 35.27	2 30 10.97	24.30				
	Lalande 3298	0 43 1.66	0 42 37.22	24.44				
	ξ Piscium	0 13 35.29	0 13 11.94	23.35				
	Mean	. . . . .	. . . . .	24.19	22.53			
Oct. 7	Lalande 261	0 26 3.83	0 26 28.98	25.15		21.456	8.846	0.102
	44 Piscium	0 10 49.55	0 11 14.76	25.21				
	Lalande 670	2 44 26.47	2 44 0.77	25.70				
	15 Ceti	2 37 8.17	2 37 33.36	25.19				
	26 Ceti	0 43 46.68	0 44 11.65	24.97				
	80 Piscium	3 33 46.16	3 33 20.81	25.35				
	89 Piscium	1 31 51.38	1 31 25.80	25.58				
	43 Ceti	2 31 43.57	2 32 7.85	24.28				
	Mean	. . . . .	. . . . .	25.18	22.45			
8	Lalande 261	0 22 46.05	0 23 10.09	24.04		20.724	8.576	0.270
	44 Piscium	0 7 31.95	0 7 54.73	22.78				
	Lalande 670	2 47 45.55	2 47 20.22	25.33				
	15 Ceti	2 33 48.10	2 34 13.06	24.96				
	26 Ceti	0 40 28.72	0 40 54.40	25.68				
	80 Piscium	3 37 3.76	3 36 39.66	24.10				
	89 Piscium	1 35 8.44	1 34 45.09	23.35				
	Mean	. . . . .	. . . . .	24.32	22.31			
24	Lalande 261	0 2 40.23	0 2 19.65	20.58		17.916	8.221	0.454
	44 Piscium	0 17 54.37	0 17 35.91	18.46				
	Lalande 1299	3 41 36.49	3 41 15.04	21.45				
	20 Ceti	2 46 16.69	2 46 39.13	22.44				
	26 Ceti	0 15 2.20	0 15 22.38	20.18				
	29 Ceti	0 23 38.00	0 23 14.98	23.02				
	Mean	. . . . .	. . . . .	21.02	21.01			
29	Lalande 1299	3 35 50.74	2 35 32.74	18.80		14.856	7.138	0.442
	20 Ceti	2 52 3.26	2 52 20.41	17.15				
	26 Ceti	0 20 48.43	0 21 4.46	16.03				
	29 Ceti	0 17 51.79	0 17 33.34	18.55				
	Mean	. . . . .	. . . . .	17.43	15.34			
30	Lalande 47374	4 20 5.35	4 20 22.20	16.85		14.873	7.216	0.294
	Lalande 261	0 5 3.02	0 5 21.91	18.89				
	44 Piscium	0 10 11.34	0 9 55.61	15.73				
	Lalande 1299	3 33 52.82	3 33 36.21	16.61				
	20 Ceti	2 53 59.66	2 54 18.42	18.76				
	26 Ceti	0 22 45.48	0 23 2.86	17.38				
	29 Ceti	0 15 54.83	0 15 36.88	17.95				
	Mean	. . . . .	. . . . .	17.45	16.37			

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π^1	*p.*	π	*E.*
		At Washington.	At Santiago.					
1862.		° ′ ″	° ′ ″	″	″	″	″	″
Oct. 31	Lalande 47374 . .	4 22 20.98	4 22 39.47	18.49		15.905	7.777	0.343
	Lalande 261 . . .	0 7 19.72	0 7 37.25	17.53				
	44 Piscium	0 7 54.28	0 7 37.70	16.58				
	Lalande 670 . . .	3 3 10.68	3 2 52.60	18.08				
	Lalande 1299 . . .	3 31 36.17	3 31 16.82	19.35				
	20 Ceti	2 56 16.92	2 56 36.94	20.02				
	26 Coti	0 25 2.13	0 25 22.40	20.27				
	Mean	. . . .	. . . . .	18.62	16.99			

Date.	Π	Π^1	$\Pi-\Pi^1$	*p.*	π	*E.*	*c.*
	″	″	″	″	″	″	″
Sept. 3	23.33	22.02	+ 1.31	19.875	8.889	0.227	+ 0.150
4	22.48	21.38	1.10	19.151	8.507	0.339	.100
8	23.37	22.79	0.58	19.909	8.622	0.507	.200
13	24.20	23.37	0.83	20.616	8.689	0.356	.100
22	24.73	21.99	2.74	21.067	8.601	0.362	.150
23	24.19	22.53	1.66	20.608	8.397	0.179	.200
Oct. 7	25.18	22.45	2.73	21.456	8.846	0.102	.200
8	24.32	22.31	2.01	20.724	8.576	0.270	.200
24	21.02	21.01	0.01	17.196	8.221	0.454	.200
29	17.43	15.34	2.09	14.856	7.138	0.442	
30	17.45	16.37	1.08	14.873	7.216	0.294	
31	18.62	16.99	+ 1.63	15.905	7.777	0.343	

Rejecting the results of October 29, 30, 31, and assigning weights to the others according to the previously described method, we have for the resulting parallax 8″.636.

If we exclude the faulty dates and correct *E* in the last series by a quantity *c*, estimated from the notes of the observers, the following table will express the individual results:

Date.	Log. π.	Log. $\frac{1}{\Delta^2 (E+c)}$.	Log. π w.	π w.
Aug. 25	0.94082	1.02016	1.96098	91.407
28	0.96566	1.10686	2.07252	118.173
Sept. 3	0.94887	1.22252	2.07139	117.869
4	0.92980	1.06332	1.99312	98.430
5	0.95612	1.15767	2.11379	129.954
8	0.93561	0.87748	1.81309	65.027
13	0.93895	1.09154	2.03049	107.273
22	0.93455	1.06887	2.00342	100.791
23	0.92413	0.99938	1.92351	83.851
24	0.93532	1.09447	2.02979	107.100
25	0.94635	1.39300	2.33935	218.449
26	0.94927	1.61268	2.56195	364.712
28	0.98474	1.30632	2.29106	195.461
Oct. 6	0.95435	1.20797	2.16332	145.319
7	0.94677	1.28957	2.23634	172.322
8	0.93327	1.09432	2.02759	106.559
20	0.92139	1.00534	1.92673	84.481
23	0.92259	1.29313	2.21572	164.331
24	0.91490	0.86108	1.77598	59.701
Nov. 2	0.91949	1.22884	2.14833	140.712
3	0.92705	0.93378	1.86083	72.582
			log. π	0.9428584

and their combination gives for the parallax 8″.7671.

ALBANY, N. Y., AND SANTIAGO DE CHILE.

The observations made at Dudley Observatory, in Albany, N. Y., given in the preceding pages, and those published at Santiago afford materials for the following table. The Albany results were computed by Professor Hough, and those for Santiago by Mr. Ferguson, for such additional dates as are not embraced in the Washington–Santiago series, previously reduced by him.

In order that weights may be assigned to the results of the several nights on which corresponding determinations were made, notes by each observer respecting atmospheric condition and character of the observations are reproduced. If no notes were made by them, the night's work is assumed to have been satisfactory:

DATE AND CHARACTER OF THE OBSERVATIONS.

Date.		At Dudley Observatory.	At Santiago.
Aug.	21	. . . .	Image badly defined.
	24	Mars blazing and badly defined	Vacillating.
	29	Mars blazing badly	Planet tremulous; stars good.
Sept.	3	. . . .	Bad.
	4	Mars blazing badly	Image unquiet.
	5	. . . .	Good; image tranquil.
	7	. . . .	Good; well defined.
	8	Mars blazing	Bad; obscured by clouds.
	22	. . . .	Bad.
	23	. . . .	Image unquiet.
	24	. . . .	Good, except δ Piscium.
	25	. . . .	Lalande 670 unquiet.
	26	. . . .	
	27	Mars blazing; hazy	Well defined only at times.
Oct.	7	Read microscopes 4 for each bisection . .	Very unquiet; not satisfactory.
	8	. . . .	Very unquiet; clouds.
	23	Mars bisected by the eye	Good and bad.
	27	. . . .	Very good.
	30	. . . .	Bad and unquiet.
Nov.	1	Observed through thick clouds	Unquiet.

Date.	Name of object.	DUDLEY.				SANTIAGO DE CHILE.			
		Mean of readings.	Nadir.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
1862.		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
Aug. 21	δ Piscium . .	35 49 50.05	—1 04.41	+ 40.80	+ 6 50 23.11	*4 43 30.24	— 0.12	+ 47.93	+ 6 50 21.33
	26 Ceti . . .	42 2 3.65	“	50.92	0 37 59.39	10 55 41.52	+ 0.32	38.30	0 37 59.98
	Mars . . .	39 46 24.80	“	47.04	+ 2 53 42.12	8 39 33.71	+ 9.36	+ 42.68	+ 2 54 5.85
24	δ Piscium . .	35 49 48.89	—1 6.30	+ 42.04	+ 6 50 24.92	4 43 26.06	+ 0.07	+ 47.84	+ 6 50 23.82
	20 Ceti . . .	44 33 11.44	“	57.30	— 1 53 12.89	13 27 6.11	— 16.76	34.70	— 1 53 12.54
	26 Ceti . . .	42 2 4.01	“	52.50	+ 0 37 59.34	10 55 39.44	0.75	38.24	+ 0 38 1.66
	80 Piscium . .	37 44 39.98	“	45.11	4 55 30.76	6 38 32.35	16.27	44.77	4 55 30.80
	Mars . .	39 39 24.96	“	48.34	3 0 42.55	8 32 48.62	— 8.11	41.81	3 1 5.35
	μ Piscium . .	37 13 57.95	“	44.32	5 26 13.58	6 7 32.33	+ 0.16	45.63	5 26 15.25
	ν Piscium . .	37 52 31.03	“	45.39	4 47 39.43	6 46 22.28	— 16.90	44.62	4 47 41.35
	Lalande 3298	39 40 1.88	“	48.39	3 0 5.58	8 33 37.22	+ 0.06	41.83	3 0 6.66
	ξ Piscium . .	40 09 27.37	“	+ 49.26	+ 2 30 39.22	9 3 19.34	— 17.06	+ 41.10	+ 2 30 42.93
29	δ Piscium . .	35 49 49.88	—1 6.54	+ 42.09	+ 6 50 24.12	4 43 36.23	— 17.59	+ 46.49	+ 6 50 30.89
	80 Piscium . .	37 44 38.26	“	45.20	4 55 32.63	6 38 13.21	+ 0.12	43.47	4 55 33.58
	Mars . .	39 32 48.36	“	48.26	3 7 19.47	8 26 10.42	— 8.30	40.76	3 7 42.74
	ν Piscium . .	37 52 32.81	“	45.52	4 47 37.76	6 46 4.68	0.00	43.32	4 47 42.08
	Lalande 3298	39 39 59.91	“	+ 48.54	+ 3 0 7.64	8 33 53.65	— 17.00	+ 40.64	+ 3 0 7.43

* There is probably a misreading of 2 seconds in δ Piscium.

Date.	Name of object.	DUDLEY.				SANTIAGO DE CHILE.			
		Mean of readings.	Nadir.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
1862.		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
Sept. 3	δ Piscium	35 49 48.06	—1 5.84	+ 42.23	+ 6 50 25.10	4 43 43.59	— 17.41	+ 47.86	+ 6 50 26.29
	20 Ceti	44 33 10.49	“	57.55	— 1 53 12.65	13 26 51.56	+ 0.11	34.71	— 1 53 12.35
	26 Ceti	42 2 1.04	“	52.72	+ 0 38 1.63	10 55 57.44	— 18.01	38.24	+ 0 38 3.43
	Mars	39 32 20.29	“	48.30	3 7 46.76	8 25 42.92	— 9.44	41.96	3 8 12.33
	ν Piscium	37 52 29.41	“	45.54	4 47 40.44	6 46 7.76	+ 0.01	44.58	4 47 41.42
	Lalande 3298	39 40 0.79	“	48.54	3 0 6.06	8 33 55.42	— 17.07	41.82	3 0 08.08
	ξ Piscium	40 9 25.72	“	+ 49.41	+ 2 30 40.26	9 3 2.62	— 0.20	+ 41.07	+ 2 30 43.26
4	δ Piscium	35 49 49.76	—1 6.30	+ 41.30	+ 6 50 24.79	4 43 23.94	— 0.06	+ 47.62	+ 6 50 28.79
	20 Ceti	44 33 13.24	“	56.29	— 1 53 13.68	13 26 33.84	+ 19.43	34.53	— 1 53 13.69
	26 Ceti	42 2 4.34	“	51.58	+ 0 37 59.93	10 55 40.74	0.15	38.04	+ 0 38 2.20
	80 Piscium	37 44 36.33	“	44.33	4 55 35.19	6 37 57.86	18.82	44.52	4 55 32.89
	Mars	39 32 59.15	“	47.31	3 7 9.39	8 26 2.71	7.81	41.73	3 7 35.46
	ν Piscium	37 52 31.82	“	44.61	4 47 39.42	6 45 49.26	16.30	44.34	4 47 43.83
	Lalande 3298	39 40 1.33	“	47.56	3 0 6.96	8 33 36.94	0.06	41.57	3 0 9.62
	ξ Piscium	40 9 26.18	“	+ 48.42	+ 2 30 41.25	9 2 44.59	+ 18.64	+ 40.83	+ 2 30 43.65
5	δ Piscium	35 49 50.11	—1 6.42	+ 40.77	+ 6 50 25.09	4 43 42.48	— 17.01	+ 47.79	+ 6 50 26.48
	20 Ceti	44 33 12.72	“	55.56	— 1 53 12.31	13 26 52.04	+ 0.26	34.65	— 1 53 11.49
	26 Ceti	42 2 4.29	“	50.89	+ 0 38 00.79	10 55 57.69	— 15.06	38.16	+ 0 37 59.69
	Mars	39 33 51.13	“	46.68	3 6 18.16	8 27 11.65	— 9.32	41.82	3 6 42.63
	ν Piscium	37 52 31.92	“	43.99	4 47 41.06	6 46 7.37	+ 0.03	44.44	4 47 41.20
	ξ Piscium	40 9 26.46	“	+ 47.70	+ 2 30 41.81	9 3 3.12	— 0.03	+ 40.91	+ 2 30 43.98
7	δ Piscium	35 49 49.81	—1 5.38	+ 40.33	+ 6 50 24.79	4 43 25.91	+ 0.17	+ 47.26	+ 6 50 26.40
	20 Ceti	44 33 13.69	“	54.97	— 1 53 13.73	13 26 33.74	17.77	34.27	— 1 53 12.02
	26 Ceti	42 2 2.17	“	50.36	+ 0 38 2.40	10 55 40.39	0.07	37.77	+ 0 38 2.53
	80 Piscium	37 44 38.74	“	43.28	4 55 32.91	6 37 59.27	18.52	44.19	4 55 31.62
	Mars	39 36 14.06	“	46.26	3 3 54.61	8 29 18.16	7.27	41.33	3 4 19.64
	ν Piscium	37 52 30.80	“	43.54	4 47 40.59	6 45 50.89	16.82	44.01	4 47 41.52
	Lalande 3298	39 40 2.33	“	46.41	3 0 6.19	8 33 37.59	0.21	41.26	3 0 8.68
	ξ Piscium	40 9 25.04	“	+ 47.25	+ 2 30 42.64	9 2 46.77	+ 16.73	+ 40.54	+ 2 30 42.26
8	26 Ceti	42 2 1.80	—1 4.96	+ 50.88	+ 0 38 1.83	10 55 57.97	— 19.54	+ 37.72	+ 0 38 4.85
	80 Piscium	37 44 37.81	“	43.77	4 55 32.93	6 38 14.96	+ 0.17	44.15	4 55 34.58
	Mars	39 37 45.46	“	46.88	3 2 22.17	8 31 6.71	— 10.70	41.28	3 2 48.09
	ν Piscium	37 52 30.50	“	44.10	4 47 39.91	6 46 7.26	+ 0.02	43.99	4 47 42.27
	Lalande 3298	39 39 59.86	“	47.03	3 0 7.62	8 33 55.67	— 18.24	41.25	3 0 9.38
	ξ Piscium	40 9 25.72	“	+ 47.87	+ 2 30 40.92	9 3 1.88	+ 0.02	+ 40.50	+ 2 30 44.16
22	δ Piscium	35 49 48.79	—1 7.44	+ 41.66	+ 6 50 26.54	4 43 25.53	+ 0.07	+ 47.07	+ 6 50 27.64
	20 Ceti	44 33 13.35	“	56.76	— 1 53 13.12	13 26 34.09	20.21	34.14	— 1 53 13.99
	Mars	40 19 1.67	“	48.93	+ 2 21 6.39	9 12 3.02	7.93	40.13	+ 2 21 31.31
	ν Piscium	37 52 30.14	“	44.86	4 47 41.99	6 45 50.00	16.85	43.94	4 47 23.26
	Lalande 3298	39 40 1.10	“	+ 47.81	+ 3 0 8.08	8 33 38.84	+ 0.13	+ 41.20	+ 3 0 8.40
23	δ Piscium	35 49 50.17	—1 7.72	+ 40.95	+ 6 50 26.15	4 43 44.56	— 19.03	+ 46.80	+ 6 50 28.10
	20 Ceti	44 33 14.12	“	55.81	— 1 53 12.66	13 26 51.98	+ 0.10	33.94	— 1 53 11.31
	26 Ceti	42 2 4.29	“	51.13	+ 0 38 1.85	10 55 59.83	— 18.61	37.39	+ 0 38 3.00
	Mars	40 23 1.26	“	48.27	2 17 7.74	9 16 19.09	11.18	39.77	2 17 34.59
	μ Piscium	37 13 57.21	“	43.16	5 26 16.90	6 7 50.25	18.06	44.60	5 26 19.24
	ν Piscium	37 52 30.29	“	44.20	4 47 42.78	6 46 7.08	0.01	43.61	4 47 43.37
	ξ Piscium	40 9 25.04	“	+ 47.97	+ 2 30 44.26	9 3 2.69	— 0.04	+ 40.16	+ 2 30 44.34
24	δ Piscium	35 49 48.12	—1 7.36	+ 42.31	+ 6 50 26.48	4 43 25.92	+ 0.03	+ 47.17	+ 6 50 28.26
	20 Ceti	44 33 11.14	“	57.66	— 1 53 11.99	13 26 34.69	19.72	34.17	— 1 53 13.20
	26 Ceti	42 2 0.69	“	52.85	+ 0 38 3.37	10 55 22.35	18.50	37.62	+ 0 38 3.81
	Mars	40 27 1.27	“	50.01	2 13 5.63	9 20 2.51	+ 7.05	39.89	2 13 33.21
	μ Piscium	37 13 54.33	“	44.64	5 26 17.94	6 7 32.75	— 0.02	44.74	5 26 19.05
	ν Piscium	37 52 30.15	“	45.73	4 47 41.03	6 45 48.27	+ 16.72	43.72	4 47 45.77
	Lalande 3298	39 40 0.42	“	48.76	3 0 7.73	8 33 37.56	0.04	40.96	3 0 10.40
	ξ Piscium	40 9 25.14	“	+ 49.64	+ 2 30 42.13	9 2 45.10	+ 19.13	+ 40.22	+ 2 30 45.03
25	Lalande 670	38 33 57.31	—1 8.58	+ 46.53	+ 4 6 14.29	7 27 53.71	— 18.22	+ 42.32	+ 4 6 14.05
	15 Ceti	43 55 20.95	“	56.22	— 1 15 19.04	12 49 0.83	+ 0.14	34.67	— 1 15 18.98
	60 Piscium	36 40 33.99	“	43.49	+ 5 59 40.65	5 34 30.08	— 18.33	45.30	+ 5 59 40.47
	Mars	40 31 6.14	“	49.91	+ 2 9 2.08	9 24 25.51	11.21	39.48	+ 2 9 28.20
	43 Ceti	43 49 56.04	“	+ 56.03	— 1 9 53.94	12 43 36.67	— 0.17	+ 34.85	— 1 9 54.43

Date.	Name of object.	DUDLEY.				SANTIAGO DE CHILE.			
		Mean of readings.	Nadir.	Ref.	App. Dec.	Mean of readings.	Inst'l corrections.	Ref.	App. Dec.
1862.		° ′ ″	′ ″	″	° ′ ″	° ′ ″	″	″	° ′ ″
Sept. 26	Lalande 670	38 33 56.92	—1 7.89	+ 46.36	+ 4 6 14.16	7 27 35.85	+ 0.03	+ 42.51	+ 4 16 14.88
	15 Ceti . . .	43 55 20.96	"	56.01	— 1 15 19.53	12 48 41.63	18.47	34.85	— 1 15 17.00
	60 Piscium . .	36 40 33.81	"	43.33	+ 5 59 40.30	5 34 12.13	0.02	45.53	+ 5 59 41.63
	20 Ceti . . .	44 33 11.21	"	57.25	— 1 53 11.02	13 26 33.52	18.47	34.02	— 1 53 9.72
	Mars . .	40 35 12.79	"	49.88	+ 2 4 54.77	9 28 15.43	7.02	39.54	+ 2 5 21.07
	43 Ceti . . .	43 49 56.44	"	55.88	— 1 9 54.48	12 43 16.89	18.98	34.99	— 1 9 52.63
	μ Piscium . .	37 13 55.04	"	+ 44.26	+ 5 26 18.14	6 7 13.71	+ 19.86	+ 44.65	+ 5 26 19.33
27	Lalande 670	38 33 56.20	—1 7.70	+ 45.73	+ 4 6 15.32	7 27 54.72	— 18.20	+ 42.85	+ 4 6 14.58
	15 Ceti . . .	43 55 19.10	"	55.24	— 1 15 17.09	12 49 1.78	+ 0.17	35.11	— 1 15 18.59
	60 Piscium . .	36 40 34.17	"	42.74	+ 5 59 40.34	5 34 30.94	— 18.23	45.87	+ 5 59 41.41
	20 Ceti . . .	44 33 13.60	"	56.45	— 1 53 12.80	13 26 53.15	0.05	34.27	— 1 53 10.58
	Mars . .	44 39 21.45	"	49.24	+ 2 0 46.56	9 32 41.32	— 10.77	39.75	+ 2 1 13.22
	43 Ceti . . .	43 49 57.20	"	55.07	— 1 9 55.02	12 43 36.76	+ 0.03	35.27	— 1 9 53.27
	μ Piscium . .	37 13 57.00	"	+ 43.01	+ 5 26 17.24	6 7 33.62	+ 0.02	+ 45.02	+ 5 26 19.63
Oct. 7	Lalande 670	38 33 57.75	—1 7.65	+ 44.54	+ 4 6 14.91	7 27 50.83	— 16.75	+ 43.42	+ 4 6 14.23
	15 Ceti . . .	43 55 21.88	"	53.82	— 1 15 18.50	12 49 0.22	+ 0.17	35.60	— 1 15 19.90
	Mars . .	41 18 17.34	"	49.16	+ 1 21 50.70	10 11 35.97	— 10.49	39.41	+ 1 22 15.34
	26 Ceti . . .	42 2 3.89	"	50.42	0 38 2.89	10 56 0.60	— 16.83	38.37	0 38 1.81
	80 Piscium . .	37 44 39.87	"	43.33	4 55 34.00	6 38 15.44	+ 0.12	44.94	4 55 34.27
	89 Piscium . .	39 46 31.38	"	46.61	+ 2 53 39.21	8 40 26.16	— 18.74	41.79	+ 2 53 39.26
	43 Ceti . . .	43 49 58.17	"	+ 53.74	— 1 9 54.71	12 43 35.09	+ 0.12	+ 35.93	— 1 9 54.39
8	Lalande 670	38 33 57.10	—1 6.52	+ 44.00	+ 4 6 14.97	7 27 34.28	+ 0.21	+ 43.23	+ 4 6 15.08
	15 Ceti . . .	43 55 22.18	"	53.13	— 1 15 19.24	12 48 41.58	18.39	35.43	— 1 15 18.20
	Mars . .	41 21 37.40	"	48.63	+ 1 18 30.04	10 14 37.96	7.45	39.07	+ 1 18 56.66
	80 Piscium . .	37 44 38.82	"	42.78	4 55 34.47	6 37 56.40	20.04	44.62	4 55 36.52
	89 Piscium . .	39 46 30.73	"	+ 46.02	+ 2 53 39.32	8 40 7.85	+ 0.03	+ 41.49	+ 2 53 39.95
27	Lalande 261	41 44 21.17	—1 10.23	+ 53.03	+ 0 55 45.58	10 38 1.48	+ 0.48	+ 37.32	+ 0 55 45.35
	44 Piscium . .	41 29 7.80	"	52.59	1 10 59.39	10 23 5.56	— 18.34	37.68	1 11 0.45
	Lalande 670	38 33 58.12	"	47.44	4 6 14 22	7 26 36.46	0.26	41.97	4 6 15.76
	Mars . .	41 44 29.60	"	53.12	0 55 37.06	10 37 55.19	8.29	37.35	0 56 1.80
	26 Ceti . . .	42 2 4.26	"	+ 53.71	+ 0 38 1.81	10 55 56.66	— 18.42	+ 36.96	+ 0 38 8.71
30	Lalande 261	41 44 21.35	—1 9.44	+ 52.00	+ 0 55 45.64	10 38 2.86	0.00	+ 37.47	+ 0 55 44.25
	44 Piscium . .	41 29 8.74	"	51.55	1 10 58.70	10 23 4.57	— 18.85	37.85	1 11 1.77
	Mars . .	41 39 20.56	"	51.85	+ 1 0 46.58	10 32 51.58	— 7.01	37.65	+ 1 1 5.04
	20 Ceti . . .	44 33 14.15	"	57.38	— 1 53 12.54	13 26 55.50	+ 0.13	33.73	— 1 53 12 26
	26 Ceti . . .	42 2 4.81	"	+ 52 55	+ 0 38 1.63	10 56 2.02	— 19.51	+ 37.17	+ 0 38 3.30
Nov. 1	44 Piscium . .	41 29 10.16	—1 10.03	+ 50.87	+ 1 10 58.65	10 23 6.69	— 19.32	+ 38.03	+ 1 10 59.82
	Lalande 670	38 33 59.19	"	45.84	4 6 14.55	7 27 38.53	+ 0.05	42.36	4 6 12.94
	Mars . .	41 34 32.21	"	51.06	+ 1 7 36.31	10 28 2.48	— 7.62	37.97	+ 1 5 55.17
	20 Ceti . . .	44 33 16.55	"	56.67	— 1 53 13.64	13 26 57.26	+ 0.50	33.91	— 1 53 14.69
	26 Ceti . . .	42 2 4.68	"	+ 51.91	+ 0 38 2.99	10 56 3.67	— 17.69	+ 37.47	+ 0 38 0.65

The same method of computation was followed as in the Washington–Santiago Observations, only such changes being made in the constants as the geographical position of Albany rendered necessary. They are :

	φ	φ'	$\varphi - \varphi'$	log. φ
Santiago	— 33° 26′ 42″.00	— 33° 16′ 7″.55	— 10′ 34″.42	9.9995614
Albany, N. Y. ..	+ 42° 39′ 49″.55	+ 42° 28′ 21″.35	+ 11′ 28″.20	9.9993358

Albany east of Santiago .. 0*h*. 12*m*. 17.9*s*. = 0.00854 days.

Albany west of Paris .... 5*h*. 4*m*. 22.0*s*.

$N' = + 4° 37' 15''.9$ log. κ = 0.088563 log. d = 0.0000322.

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π^1	*p.*	π	*E.*
		At Dudley Obs'y.	At Santiago.					
1862.		° ′ ″	° ′ ″	″	″	″	″	″
Aug. 21	δ Piscium	3 56 40.99	3 56 15.48	25.54				
	26 Ceti	2 15 42.73	2 16 5.87	23.14				
	Mean	. . . . .	. . . . .	23.14	23.73	18.879	9.333	
24	δ Piscium	3 49 42.37	3 49 18.47	23.90		17.785	8.579	0.287
	20 Ceti	4 53 55.44	4 54 17.89	22.45				
	26 Ceti	2 22 43.21	2 23 3.69	20.48				
	80 Piscium	1 54 48.21	1 54 25.45	22.76				
	μ Piscium	2 25 31.03	2 25 9.90	21.13				
	ν Piscium	1 46 56.88	1 46 36.00	20.58				
	Lalande 3298	0 0 36.97	0 0 58.69	21.72				
	ξ Piscium	0 30 3.33	0 30 24.42	21.09				
	Mean	. . . . .	. . . . .	21.80	22.80			
29	δ Piscium	3 43 4.65	3 42 48.15	16.50		16.571	7.685	1.074
	80 Piscium	1 48 13.16	1 47 50.84	22.32				
	ν Piscium	1 40 18.29	1 39 59.34	18.95				
	Lalande 3298	0 7 11.83	0 7 35.31	23.48				
	Mean	. . . . .	. . . . .	20.31	23.27			
Sept. 3	δ Piscium	3 42 38.34	3 42 13.96	24.38		19.596	8.766	0.258
	20 Ceti	5 0 59.41	5 1 24.68	25.27				
	26 Ceti	2 29 45.13	2 30 8.90	23.77				
	ν Piscium	1 39 53.68	1 39 29.09	24.59				
	Lalande 3298	0 7 40.70	0 8 4.25	23.55				
	ξ Piscium	0 37 6.50	0 37 29.07	22.57				
	Mean	. . . . .	. . . . .	24.02	25.57			
4	δ Piscium	3 43 15.40	3 42 53.33	22.07		19.702	8.753	0.596
	20 Ceti	5 0 23.07	5 0 49.15	26.08				
	26 Ceti	2 29 9.46	2 29 33.26	23.80				
	80 Piscium	1 48 25.80	1 47 57.43	28.37				
	ν Piscium	1 40 30.03	1 40 8.37	21.66				
	Lalande 3298	0 7 2.43	0 2 25.84	23.41				
	ξ Piscium	0 36 28.14	0 36 51.81	23.67				
	Mean	. . . . .	. . . . .	24.15	26.07			
5	δ Piscium	3 44 6.93	3 43 43.85	23.08		20.380	8.994	0.402
	20 Ceti	4 59 30.47	4 59 56.12	25.65				
	26 Ceti	2 28 16.37	2 28 42.94	26.57				
	ν Piscium	1 41 22.90	1 40 58.57	24.33				
	ξ Piscium	0 35 35.35	0 36 0.65	25.30				
	Mean	. . . . .	. . . . .	24.98	24.47			
7	δ Piscium	3 46 30.18	3 46 6.76	23.41		19.930	8.685	0.294
	20 Ceti	4 57 8.34	4 57 31.66	23.32				
	26 Ceti	2 25 52.21	2 26 17.11	24.90				
	80 Piscium	1 51 38.30	1 51 11.98	26.32				
	ν Piscium	1 43 45.98	1 43 21.88	24.10				
	Lalande 3298	0 3 48.42	0 4 11.96	23.54				
	ξ Piscium	0 33 11.97	0 33 37.38	25.41				
	Mean	. . . . .	. . . . .	24.43	25.03			
8	26 Ceti	2 24 20.34	2 24 43.24	21.90		19.018	8.237	0.307
	80 Piscium	1 53 10.76	1 52 46.49	24.27				
	ν Piscium	1 45 17.74	1 44 54.18	23.56				
	Lalande 3298	0 2 14.55	0 2 38.71	24.16				
	ξ Piscium	0 31 41.25	0 32 3.93	22.68				
	Mean	. . . . .	. . . . .	23.31	25.92			

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π^1	*p.*	π	*E.*
		At Dudley Obs'y.	At Santiago.					
1852.		° ′ ″	° ′ ″	″	″	″	″	″
Sept. 22	δ Piscium	4 29 20.15	4 28 56.33	23.81		19.963	8.150	0.329
	20 Ceti	4 14 19.51	4 14 45.30	25.79				
	ν Piscium	2 26 35.60	2 26 11.95	23.65				
	Lalande 3298	0 39 1.69	0 38 37.09	24.60				
	Mean	. . . . .	. . . . .	24.46	24.92			
23	δ Piscium	4 33 18.41	4 32 53.51	24.90		20.903	8.518	0.229
	20 Ceti	4 10 20.40	4 10 45.90	25.50				
	26 Ceti	1 39 5.89	1 39 31.59	25.70				
	μ Piscium	3 9 9.16	3 8 46.65	24.51				
	ν Piscium	2 30 35.04	2 30 8.78	26.26				
	ξ Piscium	0 13 36.52	0 13 9.75	26.77				
	Mean	. . . . .	. . . . .	25.61	26.85			
24	δ Piscium	4 37 20.85	4 36 55.05	25.80		21.299	8.665	0.481
	20 Ceti	4 6 17.52	4 6 46.41	28.89				
	26 Ceti	1 35 2.26	1 35 29.40	27.14				
	μ Piscium	3 13 12.31	3 12 45.84	26.47				
	ν Piscium	2 34 35.40	2 34 12.56	22.84				
	Lalande 3298	0 47 2.10	0 46 37.19	24.91				
	ξ Piscium	0 17 36.50	0 17 9.82	26.68				
	Mean	. . . . .	. . . . .	26.10	27.58			
25	Lalande 670	1 57 12.21	1 56 45.85	26.36		21.487	8.731	0.077
	15 Ceti	3 24 21.12	3 24 47.18	26.06				
	60 Piscium	3 50 38.57	3 50 12.27	26.30				
	43 Ceti	3 18 56.02	3 19 22.63	26.61				
	Mean	. . . . .	. . . . .	26.33	26.12			
26	Lalande 670	2 1 19.39	2 0 53.81	25.58		20.200	8.201	0.189
	15 Ceti	2 20 14.30	3 20 38.07	23.77				
	60 Piscium	3 54 45.53	3 54 20.56	24.97				
	20 Ceti	3 58 5.79	3 58 30.79	25.00				
	43 Ceti	3 14 49.65	3 15 13.70	24.05				
	μ Piscium	3 21 23.37	3 20 58.26	25.11				
	Mean	. . . . .	. . . . .	24.75	26.10			
27	Lalande 670	2 5 28.76	2 5 1.36	27.40		20.570	8.347	0.446
	15 Ceti	3 16 3.65	3 16 31.81	28.16				
	60 Piscium	3 58 53.78	3 58 18.19	25.59				
	20 Ceti	3 53 59.36	3 54 23.80	24.44				
	43 Ceti	3 10 41.68	3 11 6.49	24.91				
	μ Piscium	3 25 30.68	3 25 6.41	24.27				
	Mean	. . . . .	. . . . .	25.79	26.66			
Oct. 7	Lalande 670	2 44 24.21	2 43 58.89	25.32		20.480	8.443	0.208
	15 Ceti	2 37 9.20	2 37 35.24	26.04				
	26 Ceti	0 43 47.81	0 44 13.63	25.82				
	80 Piscium	3 33 43.30	3 33 18.93	24.37				
	89 Piscium	1 31 48.51	1 31 23.92	24.59				
	43 Ceti	2 31 45.41	2 32 9.73	24.32				
	Mean	. . . . .	. . . . .	25.08	24.64			
8	Lalande 670	2 47 44.93	2 47 18.42	26.51		21.363	8.839	0.156
	15 Ceti	2 33 49.28	2 34 14.86	25.58				
	80 Piscium	3 37 4.43	3 36 37.86	26.57				
	89 Piscium	1 35 9.28	1 34 43.29	25.99				
	Mean	. . . . .	. . . . .	26.16	26.62			
27	Lalande 261	0 0 8.52	0 0 16.45	24.97		19.565	9.224	0.356
	44 Piscium	0 15 22.33	0 14 58.65	23.68				
	Lalande 670	3 10 37.16	3 10 13.96	23.20				
	26 Ceti	0 17 35.25	0 17 53.09					
	Mean	. . . . .	. . . . .	23.95	24.26			

RESULTS.

Date.	Star of Comparison.	PLANET—STAR.		Π	Π^1	p.	π	E.
		At Dudley Obs'y.	At Santiago.					
		° ′ ″	° ′ ″	″	″	″	″	″
1862. 30	Lalande 261 . . .	0 5 0.94	0 5 20.79	19.85		14.342	6.959	0.647
	44 Piscium	0 10 12.12	0 9 56.73	15.39				
	20 Ceti	2 53 59.12	2 54 17.30	18.18				
	26 Ceti	0 22 44.95	0 23 1.74	16.79				
	Mean	. . . .	. . . .	17.55	18.66			
Nov. 1	44 Piscium	0 5 22.34	0 5 4.65	16.69		15.970	7.917	0.670
	Lalande 670 . . .	3 0 38.24	3 0 17.77	20.47				
	20 Ceti	2 58 49.95	2 59 9.86	19.91				
	26 Ceti	0 27 33.32	0 27 54.52	21.20				
	Mean	. . . .	. . . .	19.57	18.86			

The weights assigned were obtained by the same method as for the Washington–Santiago series, and the quantities *c* in the final column of the subjoined table, in like manner from notes of the observers:

Date.	II.	II^1.	II–II^1.	p.	π.	E.	c.
	″	″	″	″			
Aug. 21	23.14	23.73	− 0.59	18.879	9.333		
24	21.80	22.80	1.00	17.785	8.579	0.287	+ 0.4
29	20.31	23.27	2.97	16.571	7.685	1.074	
Sept. 3	24.02	25.57	1.55	19.596	8.766	0.258	+ 0.2
4	24.15	26.07	− 1.92	19.702	8.753	0.596	+ 0.3
5	24.98	24.47	+ 0.51	20.380	8.994	0.402	
7	24.43	25.03	− 0.60	19.930	8.685	0.294	
8	23.31	25.92	2.62	19.018	8.237	0.307	+ 0.4
22	24.46	24.92	0.46	19.963	8.150	0.329	+ 0.2
23	25.61	26.85	1.24	20.903	8.518	0.229	+ 0.2
24	26.10	27.58	− 1.48	21.229	8.665	0.481	
25	26.33	26.12	+ 0.21	21.487	8.731	0.077	+ 0.5
26	24.75	26.10	− 1.35	20.200	8.201	0.189	
27	25.79	26.66	− 0.87	20.570	8.347	0.446	+ 0.3
Oct. 7	25.08	24.64	+ 0.44	20.480	8.443	0.208	+ 0.4
8	26.16	26.62	− 0.46	21.363	8.839	0.156	+ 0.2
27	23.95	24.26	0.31	19.565	9.224	0.356	
30	17.55	18.66	− 1.11	14.342	6.958	0.647	
Nov. 1	19.57	18.86	+ 0.71	15.990	7.917	0.670	

It is evident that the observations of August 21 and 29, October 30, and November 1 are not trustworthy. Rejecting them arbitrarily, we have the following:

Date.		Log. π.	Log. $\frac{1}{\Delta^2 (E + c)}$	Log. π w.	π w.	w.
Aug.	24	0.93343	0.79624	1.72967	53.562	6.251
Sept.	3	0.94278	1.03781	1.98059	95.629	10.909
	4	0.94217	0.75229	1.69446	49.484	5.653
	5	0.95397	1.10601	2.05998	114.811	12.765
	7	0.93877	1.25307	2.19184	155.539	17.909
	8	0.91577	0.87728	1.79305	62.094	7.538
	22	0.91118	1.05458	1.96576	92.418	11.338
	23	0.93032	1.14726	2.07758	119.558	14.037
	24	0.93778	1.09895	2.03673	108.825	12.559
	25	0.94108	1.67834	2.61942	416.318	47.680
	26	0.91385	1.50644	2.42029	263.201	32.095
	27	0.92153	0.91060	1.83213	67.941	8.140
Oct.	7	0.92651	0.98568	1.91219	81.694	9.676
	8	0.94642	1.21495	2.16137	145.002	16.404
	27	0.96486	1.10175	2.06661	116.578	12.640

And the solar parallax resulting will be

8′.′611.

The following are all the results:

		π
From observations with equatorials...	Upsala–Santiago	8.859
	Washington–Santiago..	8.810
From observations with circles	Washington–Santiago..	8.834
	Albany–Santiago......	8.611

S. Naval Observatory

APPENDIX B.

NEW ELEMENTS OF NEMAUSA.

§ 1.

The elements given by Mr. Tietjen, in the "Berliner Jahrbuch" for 1864, have been assumed as the basis of the work. These elements referred to the mean equinox of 1858.0, are as follows:

Epoch = 1858; March 25, 24877. Washington, m. t.

	°	′	″
$M =$	2	0	32.2
$\pi =$	175	10	41.5
$\Omega =$	175	38	59.6
$i =$	9	56	47.3
$\varphi =$	3	47	53.0

$\text{Log. } a = 0.3739374$

$\mu = 975''.2153$

With these elements, assumed as osculating March 5, 1858, the special perturbations by Jupiter and Saturn of the rectangular co-ordinates of the planet have been computed for intervals of forty days, from February 13, 1858, to December 4, 1863. Assuming the plane of the equator as the plane of $x\ y$, and denoting the perturbations of the co-ordinates x, y, and z respectively by ξ, η, and ζ, the following values were found for the five oppositions of the planet, the unit being that of the seventh decimal.

Date.	ξ.	η.	s.
1858.			
Feb. 13	— 2.1	— 8.3	— 3.5
Mar. 5	0.0	0.0	0.0
25	2.2	8.5	3.5
April 14	9.1	34.4	14.1
May 4	21.2	77.7	31.9
24	39.3	138.4	57.4
June 13	64.8	216.9	90.6
July 3	— 99.3	— 313.3	— 131.6
1859.			
July 18	— 1331.2	— 11638.3	— 3647.3
Aug. 7	866.1	13012.2	4029.0
27	— 250.4	14438.7	4426.0
Sept. 16	+ 530.7	15896.5	4829.0
Oct. 6	+ 1485.7	— 17365.7	— 5234.2
1860.			
Nov. 9	+ 42125.6	— 14272.0	— 4730.7
29	42889.3	11790.4	4055.3
Dec. 19	43255.9	9245.7	3351.6
Jan. 8	43199.7	6693.8	2632.7
28	+ 42723.0	— 4200.4	— 1914.2
1862.			
Mar. 4	+ 4236.6	— 5656.2	+ 929.6
24	2956.7	6443.5	781.5
April 13	1595.7	7166.9	626.8
May 3	+ 117.1	7862.6	456.8
23	— 1481.2	8583.7	259.4
June 12	3209.7	9380.8	+ 22.6
July 2	— 5042.9	— 10302.3	— 264.2
1863.			
Aug. 6	— 1975.8	— 59400.7	— 15926.3
26	+ 1734.0	60623.6	16421.2
Sept. 15	5633.6	61409.3	16798.1
Oct. 5	9670.0	61730.3	17048.6
25	+ 13783.5	— 61577.0	— 17168.4

The next work is the construction of ephemerides for the several oppositions. The values of the constants necessary in this computation are as follows:

Date.	A.	B.	C.	Log. sin *a*.	Log. sin *b*.	Log. sin *c*.
	° ′ ″	° ′ ″	° ′ ″			
1858	265 14 36.00	175 25 26.74	172 7 44.60	9.9999627	9.9877623	9.3400625
1859	15 25.44	26 14.07	9 9.99	9.9999629	9.9877626	9.3700531
1860	16 14.98	27 1.50	10 35.55	9.9999632	9.9877629	9.3700435
1862	17 53.88	28 36.18	13 26.38	9.9999636	9.9877635	9.3700239
1863	18 43.42	29 23.61	14 51.90	9.9999639	9.9877638	9.3700145

For computing the true anomaly and the radius vector of the planet the known series proceeding according to the sines and cosines of multiples of the mean anomaly have been employed. In the case of this orbit we have—

$$v = \text{M.} + (4.4363374)\ \text{sin. M.} + (3.052875)\ \text{sin. 2 M.} + (1.81137)\ \text{sin. 3 M.} + (0.6274)\ \text{sin. 4 M.} + (9.478)\ \text{sin. 5 M.}$$

$$\frac{r}{a} = +1.0021939 - (8\ 820405)\ \text{cos. M.} - (7.33993)\ \text{cos. 2 M.} - (6.03583)\ \text{cos. 3 M.} - (4.8074)\ \text{cos. 4 M.} - (3.616)\ \text{cos. 5 M.}$$

These series give the following values of the anomalies and the radii vectores for the respective dates, Washington, *m. t*:

Date.	*M*.	*v*.	Log. *r*.
1858.	° ′ ″	° ′ ″	
Mar. 1.5	355 34 32.03	354 56 15.13	0.3442781
5.5	356 39 32.89	356 10 37.58	0.3442330
9.5	357 44 33.75	357 25 0.78	0.3442004
13.5	358 49 34.61	358 39 24.56	0.3441804
17.5	359 54 35.47	359 53 48.61	0.3441730
21.5	0 59 36.33	1 8 12.69	0.3441781
25.5	2 4 37.19	2 22 36.52	0.3441960
29.5	3 9 38.05	3 36 59.87	0.3442266
1859.			
Aug. 5.5	136 58 54.42	141 51 29.60	0.3952638
9.5	138 3 55.28	142 50 15.20	0.3955807
13.5	139 8 56.14	143 48 55.73	0.3958905
17.5	140 13 57.00	144 47 31.31	0.3961929
21.5	141 18 57.86	145 46 2.06	0.3964878
25.5	142 23 58.72	146 44 28.10	0.3967752
1860.			
Dec. 2.5	268 21 53.84	260 49 2.15	0.3766429
6.5	269 26 54.70	261 53 11.00	0.3761069
10.5	270 31 55.56	262 57 29.37	0.3755688
14.5	271 36 56.42	264 1 57.33	0.3750288
18.5	272 41 57.28	265 6 34.95	0.3744870
22.5	273 46 58.14	266 11 22.28	0.3739437
26.5	274 51 59.00	267 16 19.34	0.3733990
1862.			
May 3.5	48 25 0.14	54 24 45.63	0.3556011
7.5	49 30 1.00	55 35 16.33	0.3560667
11.5	50 35 1.86	56 45 37.93	0.3565384
15.5	51 40 2.72	57 55 50.31	0.3570160
19.5	52 45 3.58	59 5 53.37	0.3574992
23.5	53 50 4.44	60 15 47.04	0.3579878
1863.			
Sept. 10.5	182 30 31.72	182 12 7.21	0.4017696
14.5	183 35 32.58	183 9 11.44	0.4017456
18.5	184 40 33.44	184 6 16.12	0.4017132
22.5	185 45 34.30	185 3 21.37	0.4016735
26.5	186 50 35.16	186 0 27.35	0.4016231
30.5	187 55 36.02	186 57 34.15	0.4015653

From the preceding data, including the perturbations, the following ephemerides were computed for Washington mean midnight:

EPHEMERIS FOR 1858.

Date.	α.	δ.	PRECESSION AND NUTATION—		Log. △.	Aberration.
			In α.	In δ.		
	° ′ ″	° ′ ″	″	″		
Mar. 1	176 48 23.1	− 0 28 11.8	+ 11.39	− 4.47	0.09313	− 0.00714
2	176 37 53.2	0 17 44.0	11.52	4.49	0.09190	0.00712
3	176 27 9.8	− 0 7 6.9	11.65	4.51	0.09075	0.00710
4	176 16 13.7	+ 0 3 39.0	11.78	4.52	0.08969	0.00708
5	176 5 5.8	0 14 33.0	11.92	4.53	0.08872	0.00707
6	175 53 47.2	0 25 34.2	12.06	4.54	0.08784	0.00705
7	175 42 19.1	0 36 42.0	12.20	4.55	0.08705	0.00704
8	175 30 42.4	0 47 55.8	12.33	4.56	0.08635	0.00703
9	175 18 58.4	0 59 14.7	12.47	4.57	0.08575	0.00702
10	175 7 8.3	1 10 37.9	12.61	4.58	0.08524	0.00701
11	174 55 13.1	1 22 4.9	12.75	4.59	0.08482	0.00700
12	174 43 14.2	1 33 34.9	12.89	4.60	0.08450	0.00700
13	174 31 12.7	1 45 6.9	13.02	4.61	0.08428	0.00700
14	174 19 9.9	1 56 40.0	13.16	4.62	0.08416	0.00699
15	174 7 7.0	2 8 13.5	13.29	4.63	0.08415	0.00699
16	173 55 5.4	2 19 46.6	13.43	4.64	0.08420	0.00699
17	173 43 6.2	2 31 18.4	13.56	4.65	0.08434	0.00700
18	173 31 10.9	2 42 48.3	13.69	4.66	0.08458	0.00700
19	173 19 20.6	2 54 15.3	13.83	4.66	0.08494	0.00701
20	173 7 36.2	3 5 38.7	13.96	4.67	0.08538	0.00701
21	172 55 59.2	3 16 57.9	14.09	4.68	0.08592	0.00702
22	172 44 30.5	3 28 12.0	14.23	4.69	0.08655	0.00703
23	172 33 11.5	3 39 20.2	14.36	4.70	0.08726	0.00704
24	172 22 3.0	3 50 22.0	14.50	4.71	0.08806	0.00706
25	172 11 6.1	4 1 16.6	14.63	4.72	0.08896	0.00707
26	172 0 21.7	4 12 3.4	14.77	4.74	0.08995	0.00709
27	171 49 51.0	4 22 41.9	14.90	4.75	0.09102	0.00710
28	171 39 34.6	4 33 11.4	15.03	4.77	0.09217	0.00712
29	171 29 33.7	4 43 31.5	15.17	4.78	0.09339	0.00714
30	171 19 48.8	+ 4 53 41.5	+ 15.30	− 4.80	0.09470	− 0.00716

EPHEMERIS FOR 1859.

Date.	α.	δ.	PRECESSION AND NUTATION—		Log. △.	Aberration.
			In α.	In δ.		
	° ′ ″	° ′ ″	″	″		
Aug. 5	319 32 0.6	− 4 49 20.8	+ 39.58	+ 8.06	0.17206	− 0.00856
6	319 18 47.0	4 56 37.0	39.76	8.04	0.17178	0.00856
7	319 5 30.6	5 4 0.8	39.93	8.01	0.17158	0.00855
8	318 52 12.6	5 11 31.9	40.11	7.98	0.17147	0.00855
9	318 38 53.9	5 19 9.9	40.29	7.96	0.17143	0.00855
10	318 25 35.5	5 26 54.3	40.47	7.93	0.17147	0.00855
11	318 12 18.4	5 34 44.7	40.65	7.90	0.17158	0.00855
12	317 59 3.7	5 42 40.5	40.82	7.86	0.17178	0.00856
13	317 45 52.0	5 50 41.5	41.00	7.83	0.17204	0.00856
14	317 32 44.6	5 58 47.1	41.18	7.80	0.17238	0.00857
15	317 19 42.2	6 6 56.9	41.36	7.76	0.17280	0.00858
16	317 6 45.9	6 15 10.5	41.53	7.73	0.17331	0.00859
17	316 53 56.7	6 23 27.4	41.70	7.70	0.17388	0.00860
18	316 41 15.3	6 31 47.2	41.87	7.67	0.17453	0.00861
19	316 28 42.9	6 40 9.5	42.04	7.64	0.17525	0.00863
20	316 16 20.3	6 48 33.7	42.21	7.60	0.17604	0.00864
21	316 4 8.4	6 56 59.5	42.38	7.57	0.17693	0.00866
22	315 52 8.1	7 5 26.3	42.55	7.54	0.17787	0.00868
23	315 40 20.3	7 13 53.7	42.72	7.50	0.17890	0.00870
24	315 28 46.1	7 22 21.3	42.89	7.47	0.17998	0.00872
25	315 17 26.3	− 7 30 48.4	+ 43.06	+ 7.44	0.18115	− 0.00874

EPHEMERIS FOR 1860.

Date.	α.	δ.	PRECESSION AND NUTATION—		Log. △.	Aberration.
			In α.	In δ.		
	° ′ ″	° ′ ″	″	″		
Dec. 2	79 22 34.8	+ 6 31 14.9	+ 58.52	+ 7.93	0.15357	− 0.00821
3	79 7 38.5	6 28 6.7	58.67	8.03	0.15294	0.00820
4	78 52 34.1	6 25 8.8	58.82	8.13	0.15239	0.00819
5	78 37 22.9	6 22 21.4	58.97	8.23	0.15192	0.00818
6	78 22 6.2	6 19 44.7	59.13	8.33	0.15153	0.00817
7	78 6 45.1	6 17 18.9	59.29	8.43	0.15122	0.00816
8	77 51 20.7	6 15 4.4	59.45	8.54	0.15100	0.00816
9	77 35 54.5	6 13 1.0	59.61	8.64	0.15085	0.00815
10	77 20 27.7	6 11 9.2	59.77	8.75	0.15079	0.00815
11	77 5 1.6	6 9 28.9	59.93	8.86	0.15082	0.00815
12	76 49 37.6	6 8 0.4	60.10	8.97	0.15093	0.00816
13	76 34 16.9	6 6 43.8	60.27	9.08	0.15112	0.00816
14	76 19 0.8	6 5 39.0	60.45	9.19	0.15138	0.00816
15	76 3 50.7	6 4 46.1	60.62	9.30	0.15173	0.00817
16	75 48 47.7	6 4 5.3	60.80	9.41	0.15217	0.00818
17	75 33 53.1	6 3 36.5	60.97	9.53	0.15268	0.00819
18	75 19 8.0	6 3 19.9	61.15	9.64	0.15328	0.00820
19	75 4 33.7	6 3 15.2	61.33	9.75	0.15396	0.00821
20	74 50 11.2	6 3 22.5	61.51	9.86	0.15471	0.00823
21	74 36 1.6	6 3 41.7	61.69	9.97	0.15552	0.00824
22	74 22 6.1	6 4 12.9	61.87	10.08	0.15642	0.00826
23	74 8 25.6	6 4 55.8	62.06	10.19	0.15739	0.00828
24	73 55 1.1	6 5 50.5	62.24	10.30	0.15843	0.00830
25	73 41 53.5	6 6 56.8	62.43	10.41	0.15955	0.00832
26	73 29 3.7	+ 6 8 14.7	+ 62.62	+ 10.52	0.16073	− 0.00834

EPHEMERIS FOR 1862.

Date.	α.	δ.	PRECESSION AND NUTATION—		Log. Δ.	Aberration.
			In α.	In δ.		
	° ′ ″	° ′ ″	″	″		
May 3	235 3 32.4	− 4 55 3.6	+ 31.13	− 7.31	0.10930	− 0.00741
4	234 50 54.5	4 47 23.8	31.23	7.36	0.10880	0.00740
5	234 38 6.4	4 39 51.3	31.33	7.41	0.10829	0.00739
6	234 25 9.2	4 32 26.7	31.43	7.46	0.10805	0.00739
7	234 12 4.1	4 25 10.4	31.54	7.51	0.10783	0.00738
8	233 58 52.0	4 18 2.9	31.65	7.57	0.10768	0.00738
9	233 45 34.3	4 11 4.5	31.76	7.62	0.10760	0.00738
10	233 32 12.0	4 4 15.6	31.87	7.68	0.10761	0.00738
11	233 18 46.2	3 57 36.6	31.98	7.74	0.10770	0.00738
12	233 5 17.8	3 51 7.9	32.09	7.80	0.10788	0.00738
13	232 51 48.2	3 44 50.0	32.21	7.86	0.10814	0.00739
14	232 38 18.4	3 38 43.2	32.33	7.92	0.10848	0.00739
15	232 24 49.3	3 32 47.8	32.44	7.98	0.10889	0.00740
16	232 11 22.3	3 27 4.1	32.56	8.04	0.10940	0.00741
17	231 57 58.4	3 21 32.5	32.69	8.10	0.10998	0.00742
18	231 44 38.6	3 16 13.4	32.82	8.17	0.11065	0.00743
19	231 31 23.9	3 11 7.0	32.95	8.23	9.11140	0.00744
20	231 18 15.1	3 6 13.4	33.08	8.29	0.11222	0.00746
21	231 5 14.7	3 1 33.1	33.21	8.35	0.11313	0.00747
22	230 52 22.1	2 57 6.3	33.34	8.41	0.11411	0.00749
23	230 39 38.9	− 2 52 53.2	+ 33.47	− 8.48	0.11519	− 0.00751

EPHEMERIS FOR 1863.

Date.	α.	δ.	PRECESSION AND NUTATION—		Δ.	Aberration.
			In α.	In δ.		
	° ′ ″	° ′ ″	″	″		
Sept. 10	3 16 45.3	+ 0 55 29.5	+ 46.30	+ 19.87	0.18716	— 0.00886
11	3 5 22.1	0 46 5.4	46.37	19.92	0.18628	0.00885
12	2 53 47.6	0 36 35.9	46.44	19.97	0.18547	0.00883
13	2 42 3.0	0 27 1.4	46.51	20.02	0.18475	0.00882
14	2 30 9.0	0 17 22.4	46.57	20.07	0.18410	0.00880
15	2 18 6.7	+ 0 7 39.5	46.64	20.13	0.18352	0.00879
16	2 5 57.0	— 0 2 6.8	46.71	20.18	0.18303	0.00878
17	1 53 40.8	0 11 55.8	46.78	20.23	0.18261	0.00877
18	1 41 19.2	0 21 46.9	46.85	20.28	0.18228	0.00876
19	1 28 53.0	0 31 39.6	46.92	20.33	0.18202	0.00876
20	1 16 23.4	0 41 33.3	46.98	20.38	0.18185	0.00875
21	1 3 51.3	0 51 27.4	47.05	20.43	0.18175	0.00875
22	0 51 17.6	1 1 21.4	47.12	20.48	0.18172	0.00875
23	0 38 43.2	1 11 14.7	47.19	20.53	0.18180	0.00875
24	0 26 9.2	1 21 6.7	47.25	20.58	0.18194	0.00876
25	0 13 33.6	1 30 55.7	47.32	20.62	0.18216	0.00876
26	0 1 6.2	1 40 44.2	47.39	20.67	0.18244	0.00876
27	359 48 39.0	1 50 23.8	47.46	20.72	0.18281	0.00877
28	359 36 15.9	2 0 9.9	47.53	20.77	0.18327	0.00878
29	359 23 58.0	2 9 46.9	47.60	20.82	0.18380	0.00880
30	359 11 45.9	— 2 19 19.1	+ 47.67	+ 20.87	0.18442	— 0.00881

§ 2.

The following tables give the comparison of the observations with the elements. At first the ephemerides were extended so as to include all the observations of the planet that have been published; but since, for nearly all the equatorial observations the positions of the stars of comparison have not been determined anew, and the comparison of these observations showing large discordances, it was thought best for the present work at least, not to combine them with good meridian observations. In the case of the Paris Observations of 1858, and the Berlin Equatorial Observations of 1860, the stars of comparison were reobserved. G. W. Hough, esq., Director of the Dudley Observatory, has very kindly furnished the Meridian Observations of 1863. In the comparisons that follow the time of the observation has been reduced to Washington mean time and corrected for aberration:

1858.

Place.	Date.	OBSERVED.		PARALLAX.		COMPUTED.		c—o.	
		α.	δ.	In α.	In δ.	α.	δ.	Δ α.	Δ δ.
		° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	″	″
Berlin . . .	Mar. 2, 34013	176 39 34.4	— 0 19 35.9	+ 1.4	+ 5.5	176 39 46.3	— 0 19 29.5	+ 10.5	+ 0.9
	3, 26132	176 29 51.7	— 0 9 52.3	— 0.6	5.5	176 29 56.2	— 0 9 44.3	5.1	+ 2.5
	11, 18989	174 59 8.5	+ 1 18 23.2	— 1.8	5.5	174 59 8.1	+ 1 18 26.9	1.4	— 1.8
	12, 30824	174 45 39.1	1 31 17.7	+ 1.4	5.5	174 45 45.1	1 31 17.8	4.6	— 5.4
	19, 30159	173 21 45.3	2 51 47.0	1.9	5.4	173 21 54.9	2 51 54.5	7.7	+ 2.1
	25, 21310	172 14 25.8	3 58 1.2	0.0	5.2	172 14 27.9	3 58 4.9	2.1	— 1.5
	27, 15405	171 53 36.6	4 18 54.7	— 1.4	5.2	171 53 42.5	4 18 57.3	7.3	2.6
Bilk . . .	5, 13279	176 9 22.3	0 10 19.2	3.7	5.4	176 9 24.3	0 10 27.5	5.7	2.9
Paris . . .	9, 26693	175 21 53.7	0 56 23.5	— 0.8	5.2	175 21 55.5	0 56 31.5	2.6	2.8
	9, 41605	175 20 4.3	0 58 12.0	+ 3.2	5.2	175 20 10.2	0 58 12.9	2.7	4.3
	20, 28259	173 10 17.1	3 3 7.7	0.7	5.0	173 10 22.6	3 3 5.7	4.8	7.0
	21, 26877	172 58 49.3	3 14 12.3	0.5	6.3	172 58 53.8	3 14 16.5	4.0	2.1
	21, 34146	172 57 55.2	3 15 0.9	+ 2.4	5.1	172 58 3.3	3 15 5.8	5.7	— 0.2
Vienna . .	18, 13184	173 35 42.1		— 2.6		173 35 47.9		8.4	
	18, 14255	173 35 35.2	2 38 30.2	2.4	5.1	173 35 39.8	2 38 37.3	7.0	+2.0
	20, 06965	173 12 54.1	3 0 37.1	3.8	5.1	173 12 52.8	3 0 40.3	2.5	—1.9
	24, 10137	172 26 44.9	3 45 49.4	2.9	5.0	172 26 42.7	3 45 54.3	+ 0.7	—0.1
	29, 08343	171 34 1.2	+ 4 39 7.2	— 2.9	+ 4.8	171 33 57.2	+ 4 39 18.0	— 1.1	+6.0

Mean, $\Delta \alpha = + 4.5$; $\Delta \delta = - 1''.2$

1859.

Place.	Date.	OBSERVED.		PARALLAX.		COMPUTED.		c—o.	
		α.	δ.	In α.	In δ.	α.	δ.	Δ α.	Δ δ.
		° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	″	″
Albany . .	Aug. 13, 47035	317 47 3.1	− 5 50 20.0	0.0	+ 4.3	317 46 56.4	− 5 50 19.4	− 6.7	− 3.7
	15, 46366	317 20 54.7	6 6 30.9	0.0	4.3	317 20 51.9	6 6 31.2	2.8	4.6
	21, 44372	316 5 33.9	6 56 24.9	0.0	4.3	316 5 31.7	6 56 23.4	2.2	2.8
	22, 44041	315 53 36.6	7 4 50.2	0.0	4.3	315 53 33.2	7 4 48.6	3.4	2.7
	23, 43712	315 41 50.8	− 7 13 15.1	0.0	+ 4.3	315 41 47.1	− 7 13 14.2	− 3.7	− 3.4

Mean, Δ α = − 3″.8; Δ δ = − 3″.4.

1860.

Place.	Date.	OBSERVED.		PARALLAX.		COMPUTED.		c—o.	
		α.	δ.	In α.	In δ.	α.	δ.	Δ α.	Δ δ.
		° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	″	″
Berlin . . .	Dec. 3, 20711	79 13 27.0	+ 6 29 9.2	− 1.2	+ 4.4	79 13 0.5	+ 6 29 8.8	− 25.3	− 4.8
	6, 31626	78 26 15.3	6 20 19.8	+ 1.6	4.4	78 25 54.1	6 20 21.0	22.8	3.2
	7, 11049	78 14 9.2	6 18 21.9	− 2.9	4.4	78 13 43.5	6 18 22.8	22.8	3.5
	8, 27715	77 56 6.7	6 15 41.0	+ 0.9	4.4	77 55 46.3	6 15 41.9	21.3	3.5
	18, 27557	75 23 46.9	6 3 32.9	+ 1.4	4.4	75 23 26.9	6 3 32.2	21.4	5.1
	25, 12182	73 48 19.0	+ 6 6 40.3	− 1.3	+ 4.3	73 47 51.5	+ 6 6 40.8	− 26.2	− 3.8

Mean, Δ α = − 23″.3; Δ δ = − 4″.0.

1862.

Place.	Date.	OBSERVED.		PARALLAX.		COMPUTED.		c—o.	
		α.	δ.	In α.	In δ.	α.	δ.	Δ α.	Δ δ.
		° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	″	″
Berlin . . .	May 2, 28200	235 16 24.7	− 5 4 18.1	0.0	+ 5.6	235 19 11.3	− 5 4 40.1	+166.6	−27.6
	6, 26878	434 25 49.0	4 33 53.5	0.0	5.6	234 28 41.1	4 34 16.2	172.1	28.3
	7, 26545	234 12 49.8	4 26 39.9	0.0	5.6	234 15 39.7	4 26 59.5	169.9	25.2
Kremsmunster	6, 26673	234 25 57.3	4 33 49.4	0.0	0.0	234 28 42.7	4 34 17.1	165.4	27.7
	7, 26340	234 12 55.2	− 4 26 33.2	0.0	+ 0.0	234 15 42.0	− 4 27 0.4	+166.8	−27.2

Mean, Δ α = + 168″.2; Δ δ = − 27″.2.

1863.

Place.	Date.	OBSERVED.		PARALLAX.		COMPUTED.		c—o.	
		α.	δ.	In α.	In δ.	α.	δ.	Δ α.	Δ δ.
		° ′ ″	° ′ ″	″	″	° ′ ″	° ′ ″	″	″
Albany . .	Sept. 15, 50323	2 18 2.2	+ 0 7 40.5	0.0	+ 3.8	2 18 51.0	+ 0 7 57.7	+ 48.8	+13.4
	16, 49995	2 5 53.8	− 0 2 5.2	0.0	3.8	2 6 43.7	− 0 1 46.6	49.9	14.8
	22, 48013	0 51 29.2	1 1 9.8	0.0	3.9	0 52 19.7	1 0 49.1	50.5	16.8
	23, 47682	0 38 59.5	1 10 59.5	0.0	3.9	0 39 47.9	1 10 40.5	48.4	15.1
	27, 46360	359 49 6.6	1 50 6.1	0.0	3.9	359 49 53.6	1 49 46.9	47.0	15.3
	28, 46030	359 36 45.0	1 59 45.4	0.0	3.9	359 37 32.8	1 59 26.1	47.8	15.4
	29, 45700	359 24 28.0	− 2 9 20.2	0.0	+ 3.9	359 25 17.2	− 2 9 1.3	+ 49.2	+15.0

Mean, Δ α = + 48″.9; Δ δ = + 15″.1.

Applying these corrections we have the following normal places, which are referred to the mean equinox at the beginning of the year of the several dates:

Date.	α.	δ.	C—O.	
			Δα.	Δδ.
	° ′ ″	° ′ ″	″	″
1858. March 16.5	173 55 0.9	+ 2 19 47.8	+ 4.5	— 1.2
1859. August 18.5	316 41 19.1	— 6 31 43.8	— 3.8	— 3.4
1860. December 11.5	77 5 24.9	+ 6 9 32.9	— 23.3	— 4.0
1862. May 5.5	234 35 18.2	— 4 39 24.1	+ 168.2	— 27.2
1863. September 22.5	0 50 28.7	— 1 1 36.5	+ 48.9	+ 15.1

§ 3.

Equations of condition were now computed between the assumed elements and the residuals resulting from the preceding comparison. For this purpose the formulas given by *Goetze*, in the *Ergänzung Heft zu den Astronomische Nachrichten*, have been used, and which, after trying several forms, seem to be as safe and convenient for the computation as can be desired. This computation has given the following results:

RIGHT ASCENSION.

$$\begin{array}{rrrrrrrl}
 & & & & & & '' & \\
+2.0252\,x & +0.1678\,y & -0.0681\,z & -2.5550\,u & -0.9931\,v & -0.0061\,w & +4.5 & =0. \\
+1.4805 & +7.6793 & +1.9321 & +1.5880 & -0.6248 & -0.1559 & -3.8 & =0. \\
+1.6562 & +16.7165 & -3.3142 & +0.1720 & -0.2753 & +0.1082 & -23.3 & =0. \\
+1.8812 & +28.8473 & +3.0070 & -1.3870 & -0.5207 & +0.2103 & +168.2 & =0. \\
+1.4167 & +28.7294 & -0.2843 & +1.9650 & -0.9116 & +0.0311 & +48.9 & =0.
\end{array}$$

DECLINATION.

$$\begin{array}{rrrrrrrl}
 & & & & & & '' & \\
-0.4816\,x & -0.0354\,y & +0.0196\,z & +0.6080\,u & -2.9939\,v & -0.0273\,w & -1.2 & =0. \\
+0.2451 & +1.4103 & +0.2476 & +0.3020 & +2.2688 & +0.9517 & -3.4 & =0. \\
+0.0902 & +0.6260 & -0.1832 & +0.1800 & +0.3456 & -1.6484 & -4.0 & =0. \\
-0.3043 & -4.4022 & -0.3584 & +0.3220 & -1.7027 & +1.4168 & -27.2 & =0. \\
+0.3413 & +6.9027 & -0.0559 & +0.4750 & +2.7190 & -0.1289 & +15.1 & =0.
\end{array}$$

Treating these equations by the method of least squares and assigning equal weights to them we have the following final equations:

$$\begin{array}{rrrrrrrl}
+15.092\,x & +138.480\,y & +2.612\,z & -2.502\,u & -2.188\,v & -0.002\,w & +363.41 & =0. \\
 & +794.734 & +15.454 & +56.450 & -1.009 & +0.781 & +2721.31 & =0. \\
 & & +23.319 & -2.810 & -0.227 & -0.014 & +454.40 & =0. \\
 & & & +10.924 & -0.219 & -0.131 & -241.09 & =0. \\
 & & & & +26.783 & -1.158 & +9.76 & =0. \\
 & & & & & +5.676 & -7.00 & =0.
\end{array}$$

Hence the values of the corrections are—

$$\begin{aligned} x &= d L &&= +25.27. \\ y &= 100\ d\mu &&= -\ 4.66677. \\ z &= d\varphi &&= -16.83. \\ u &= \tfrac{1}{10}\ d\pi &&= +22.078. \\ v &= \tfrac{1}{10}\ d\Omega &&= -\ 0.311. \\ w &= d i &&= +\ 1.23. \end{aligned}$$

And the corrected elements are as follows:

Epoch = 1858; March 25.24877. Washington, *m. t.*

$$\begin{array}{rl} & \;\;\;\;\;\;\;{}^{\circ}\;\;\;\;{}'\;\;\;\;\;{}'' \\ \text{L.} = & 177\ \ 11\ \ 38.97 \\ \pi = & 175\ \ 14\ \ 22.28 \\ \Omega = & 175\ \ 38\ \ 56.49 \\ i = & \;\;\;9\ \ 56\ \ 48.53 \\ \varphi = & \;\;\;3\ \ 47\ \ 36.17 \\ \mu = & 975.168632 \\ \text{Log}\ a = & \;\;0.3739513 \end{array} \left.\begin{array}{l} \\ \\ \\ \\ \end{array}\right\} \begin{array}{l} \\ \qquad\qquad\qquad {}'' \\ \qquad\quad + 50.235\ t \\ 1858.0\ + 50.442\ t \\ \qquad\quad -\ \ 0.487\ t \\ \\ \\ \\ \end{array}$$

By direct computation these elements represent the normal places as follows, (C — O:)

1858	$\Delta\alpha = +1.7$	$\Delta\delta = +0.3$
1859	$+1.9$	-0.6
1860	$+2.0$	-0.4
1862	$+1.7$	$+0.6$
1863	$+0.2$	$+2.2$

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT,

1863.

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 1	Sun I	1	58.3	59.3	0.4	1.5	4.4	25.4	46.1	48.9	50.0	51.0	52.0	46 25.21	— 0.04	—19.71	18 46 5.46	. .
	Sun II	2	20.6	21.6	22.5	23.4	26.5	47.4	8.3	11.1	12.0	13.0	14.0	48 47.27	0.04	19.71	18 48 27.52	. .
	Venus I	3	15.6	16.4	17.2	18.2	21.3	42.2	3.0	6.0	7.0	8.0	9.0	10 42.17	0.04	19.72	19 10 22.41	+ 0.36
Y.	α Aquilæ	4	0.6	1.5	2.4	3.4	6.0	25.4	44.8	47.5	48.4	49.3	50.3	44 25.42	0.12	19.72	19 44 5.58	— 8.47
	Weisse 120	5	6.7	7.6	8.5	9.5	12.3	. .	50.5	53.2	54.1	55.0	56.0	3 31.34	0.10	19.78	1 3 11.46	10.46
	Polaris	6	13.5	48.5	26.0	3.0	54.5	. .	44.0	36.0	12.0	51.0	29.0	9 49.75	10.08	19.78	1 9 19.89	77.54
	f Piscium	7	40.5	41.4	42.2	43.2	45.8	5.1	24.2	27.0	27.9	28.7	29.7	11 5.06	0.11	19.78	1 10 45.17	10.53
	θ Ceti	8	6.9	7.7	8.6	9.5	12.4	31.7	51.1	53.7	54.7	55.6	56.5	17 31.67	0.08	19.78	1 17 11.81	10.22
	ν Piscium	9	. .	58.6	1.4	2.3	3.2	4.0	21.7	22.6	25.3	26.3	27.2	35 13.26	33.85	19.78	1 34 19.63	10.74
	ο Piscium	10	6.3	7.2	8.0	8.9	11.7	31.2	50.4	53.1	54.0	54.9	55.8	38 31.05	0.12	19.78	1 38 11.15	10.94
	Weisse 773	11	36.8	37.5	38.4	39.4	42.0	1.4	20.4	23.1	24.1	25.0	25.9	44 1.27	0.09	19.78	1 43 41.40	10.54
	Weisse 808	12	33.2	34.2	35.0	36.0	38.7	57.8	16.9	19.7	20.5	21.4	22.4	45 57.80	0.09	19.78	1 45 37.93	10.55
	Weisse 963	13	29.2	30.0	30.9	31.8	34.4	53.8	12.9	15.5	16.5	17.4	18.3	54 53.70	0.11	19.78	1 54 33.81	10.85
	Weisse 1071	14	18.9	19.8	20.7	21.6	24.4	43.8	3.0	5.8	6.6	7.6	8.5	0 43.70	0.12	19.78	2 0 23.80	11.09
	Weisse 1080	15	. .	23.9	24.7	25.6	26.5	27.4	44.9	47.6	48.4	49.3	50.2	1 36.85	11.43	19.79	2 1 5.63	11.10
	Weisse 38	†16	26.8	27.8	28.7	29.5	32.4	51.9	11.1	13.9	14.7	15.5	16.5	4 51.71	0.12	19.79	2 4 31.80	11.16
	B. A. C. 722	17	44.5	48.4	46.2	47.0	49.8	9.1	28.4	31.1	31.9	32.9	33.8	13 9.10	0.09	19.79	2 12 49.22	10.53
	Weisse 250	18	30.0	30.9	31.9	32.8	35.5	54.8	14.0	16.9	17.8	18.7	19.6	16 54.81	0.09	19.79	2 16 34.93	10.51
	B. Z. 27, 25	19	. .	33.2	34.2	35.1	36.0	37.0	55.8	58.7	59.6	0.7	1.6	19 47.19	12.27	19.79	2 19 15.13	12.00
	B. Z. 27, 26	20	. .	8.8	12.0	13.0	14.0	15.0	33.5	34.6	37.8	38.7	39.7	20 24.71	36.50	19.79	2 19 28.42	12.00
	Weisse 386	21	. .	13.0	15.7	16.6	17.5	18.6	36.2	37.2	40.0	40.9	41.8	24 27.75	33.95	19.79	2 23 34.01	10.53
	Weisse 470	22	. .	1.0	1.9	2.8	3.7	4.5	22.5	25.3	26.2	27.1	28.0	29 14.30	11.71	19.79	2 28 42.80	11.66
	* + 14° 37′	23	. .	55.0	57.6	58.5	59.6	0.5	18.5	19.3	21.9	22.8	23.9	30 9.76	34.88	19.79	2 29 15.09	11.66
	Weisse 574	24	41.4	42.2	43.0	44.0	46.7	5.9	24.8	27.7	28.6	29.5	30.3	34 5.83	0.09	19.79	2 33 45.95	10.70
	Weisse 640	25	27.7	28.5	29.4	30.3	33.0	52.3	11.4	14.2	15.0	15.9	16.9	37 52.24	0.09	19.79	2 37 32.36	10.67
	* + 25° 32′	26	25.2	26.3	27.2	28.2	31.3	52.5	13.8	16.7	17.8	18.7	19.6	47 52.48	0.18	19.79	2 47 32.51	12.56
	λ Ceti	27	19.4	20.3	21.2	22.2	25.0	44.2	3.6	6.2	7.2	8.1	9.0	52 44.22	0.12	19.79	2 52 24.31	11.49
	κ Persei	28	. .	36.3	37.5	38.8	40.1	41.2	5.4	9.5	10.6	11.8	13.1	0 54.43	15.96	19.79	3 0 18.68	14.58
	δ Arietis	29	44.0	44.9	45.9	46.8	49.7	10.1	30.2	33.2	34.0	35.0	36.0	4 9.98	0.16	19.79	3 3 50.03	12.31
	l Persei	30	5.8	7.0	8.1	9.2	13.1	39.4	5.5	9.4	10.5	11.6	12.8	12 39.31	0.29	19.80	3 12 19.22	14.61
	Groombridge 698	31	. .	16.8	17.9	19.2	20.3	21.4	45.0	48.6	49.7	51.1	52.3	23 34.23	15.42	19.80	3 22 59.01	14.72
	ε Eridani	32	. .	9.7	12.5	13.4	14.3	15.2	32.8	33.8	36.6	37.5	38.4	27 24.42	34.20	19.80	3 26 30.42	10.34
	11 Tauri	33	. .	. .	. .	. .	. .	. .	19.0	22.0	23.0	24.1	25.0	33 22.62	24.89	19.80	3 32 37.93	13.01
	24 Tauri	34	8.2	9.2	10.2	11.1	14.2	35.1	55.9	58.9	0.0	1.0	1.9	39 35.06	0.18	19.80	3 39 15.08	12.97
	η Tauri	35	16.4	17.2	18.2	19.0	22.2	. .	4.1	6.8	7.8	8.8	9.7	39 43.02	0.17	19.80	3 39 23.05	12.97
	B. Z. 391, 127	36	42.4	43.3	44.3	45.2	48.2	. .	28.8	31.8	32.7	33.5	34.6	47 8.48	0.15	19.80	3 46 48.53	12.69
	B. Z. 391, 128	37	59.4	0.2	1.1	2.1	4.7	. .	45.6	48.5	49.5	50.4	51.5	47 25.30	0.15	19.80	3 47 5.35	12.70
	A¹ Tauri	38	31.9	32.8	33.9	34.8	37.7	58.2	18.7	21.8	22.7	23.6	24.6	56 58.25	0.17	19.80	3 56 38.28	12.94
	Moon I	39	47.0	47.9	48.9	49.9	52.9	14.0	35.2	38.3	39.2	40.2	41.1	26 14.05	0.17	19.81	4 25 54.07	. .
	α Tauri	40	0.2	1.2	2.3	3.3	6.0	26.2	46.0	49.1	49.9	50.7	51.7	28 26.05	0.15	19.81	4 28 6.09	12.69
	τ Tauri	41	57.4	58.3	59.2	0.2	3.3	24.1	44.9	47.9	48.8	49.8	50.8	34 24.06	0.17	19.81	4 34 4.08	13.30
	μ Eridani	42	36.7	37.6	38.5	39.4	42.1	1.4	20.5	23.3	24.2	25.1	26.0	39 1.35	0.09	19.81	4 38 41.45	11.19
N.	α Scorpii	43	53.9	55.0	55.9	57.0	19.3	21.1	23.1	45.5	46.7	47.6	48.6	21 21.25	0.07	20.46	16 20 0.72	— 11.08
	δ Ursæ Minoris	44	. .	. .	. .	57.0	10.5	27.0	41.0	56.0	. .	. .	. .	16 26.30	— 2.77	—20.46	18 16 3.07	+ 87.24

16. Preceded by a star of (9) to northward.

January 1, 4h. 45m. Image west $\overset{r.}{0.12}$. Clamp east.

January 1, 18h. to 5h. n. = $-\overset{s.}{0}.158$.
16h. to 0h. n. = —0.055.
Observations of January 1 made with the clamp east.

CORRECTIONS, &c.			
Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 1, 23.6	— 19.76	— 0.010	— 0.100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Jan. 2	Sun I	1	24.3	25.2	26.1	27.2	30.1	50.9	11.4	14.7	15.7	16.7	17.7	50 50.91	— 0.07	—20.46	18 50 30.38	. .
	Sun II	2	46.3	47.2	48.1	49.0	11.9	12.8	13.8	36.7	37.7	38.6	39.6	53 12.88	0.07	20.46	18 52 52.35	. .
	ζ Cygni	3	58.5	59.4	0.4	1.5	4.7	26.8	48.7	52.0	53.0	54.0	54.9	7 26.72	0.13	20.46	21 7 6.13	— 7.36
N.	β Aquarii	4	16.6	17.5	18.4	19.2	22.1	41.3	0.5	3.2	4.1	5.0	5.9	24 41.26	0.08	20.46	21 24 20.72	9.53
	12 Ceti	5	0.6	1.4	2.4	5.1	23.4	24.3	25.2	43.5	46.2	47.2	48.0	23 24.30	0.08	20.46	0 23 3.76	10.10
	Lacaille 122	6	-	6.7	7.7	8.8	9.8	10.7	30.2	33.3	34.2	35.3	36.4	27 21.31	12.56	20.46	0 26 48.29	9.81
	B. A. C. 160	7	12.5	13.5	14.6	15.5	18.4	39.7	0.9	3.9	4.8	5.9	6.9	30 39.69	0.00	20.46	0 30 19.23	9.82
	β Ceti	8	38.3	39.2	40.2	41.0	3.2	4.2	5.0	27.2	28.2	29.1	30.0	37 4.15	0.02	20.46	0 36 43.67	9.96
	Lacaille 241	†9	23.2	24.3	25.2	26.2	29.2	50.4	11.6	14.6	15.6	16.6	17.5	46 50.40	0.00	20.46	0 46 29.94	9.78
	Lacaille 252	10	. .	. .	. .	0.0	1.0	1.9	2.9	3.9	. .	. .	. .	49 1.94	— 0.02	20.46	0 48 41.46	9.77
	σ Sculptoris	11	45.9	47.0	48.2	49.2	52.6	15.3	37.7	40.9	41.9	43.0	44.1	56 15.07	+ 0.03	20.46	0 55 54.64	9.36
	* + 2° 2′	12	6.3	7.2	8.1	9.0	11.6	30.9	50.0	52.7	53.6	54.4	55.2	2 30.82	— 0.09	20.46	1 2 10.27	10.44
	* + 2° 17′	13	10.3	11.2	12.0	13.0	34.0	35.0	35.9	56.7	57.6	58.5	59.5	9 34.88	0.10	20.46	1 9 14.32	10.49
	Polaris	†14	. .	. .	. .	. .	. .	. .	. .	36.0	14.0	52.0	27.0	25 32.25	— 15 52.56	20.46	1 9 19.23	76.78
	Lacaille 362	15	48.7	49.7	50.8	51.8	54.9	16.9	38.9	42.0	43.0	44.2	45.2	14 16.92	+ 0.01	20.46	1 13 56.47	9.47
	Lacaille 480	†16	50.7	51.6	52.6	53.8	56.8	18.9	41.0	44.0	45.1	46.2	47.3	33 18.91	+ 0.01	20.46	1 32 58.46	9.50
	ο Piscium	17	8.8	9.6	12.3	30.1	31.0	32.0	32.8	33.6	51.2	54.0	54.8	38 31.84	— 0.11	20.46	1 38 11.27	10.91
	Lacaille 1370	18	. .	. .	. .	33.9	34.9	35.8	36.8	37.9	. .	. .	. .	4 35.86	0.02	20.46	4 4 15.38	9.53
	Lacaille 1373	19	55.8	56.7	57.7	58.6	1.7	23.0	44.1	47.0	48.0	48.9	49.9	5 22.86	0.00	20.46	4 5 2.40	9.53
	γ Tauri	20	57.5	58.4	59.2	0.2	3.0	. .	42.9	45.5	46.5	47.3	48.3	12 22.88	0.15	20.46	4 12 2.27	12.54
	Lacaille 1431	21	17.3	18.5	19.5	20.4	23.5	44.7	5.6	8.7	9.6	10.7	11.6	17 44.55	0.00	20.46	4 17 24.09	9.55
	α Tauri	†22	. .	24.8	25.7	26.6	27.5	28.5	46.7	49.5	50.4	51.3	52.3	28 38.33	11.81	20.46	4 28 6.06	12.68
	τ Tauri	23	. .	45.4	48.5	49.4	50.3	51.4	10.2	11.3	14.1	15.1	16.1	35 1.18	— 36.63	20.46	4 34 4.09	— 13.30
	ε Ursæ Minoris, S. P.	24	. .	. .	. .	26.4	19.8	13.5	7.8	0.6	. .	. .	. .	0 13.62	+ 2.17	20.46	16 59 55.33	+ 30.86
	Uranus, (centre)	25	. .	. .	. .	. .	. .	. .	39.2	40.3	43.1	44.1	45.1	7 42.36	— 48.90	20.46	5 6 33.00	. .
	β Orionis	26	. .	. .	. .	. .	. .	. .	2.4	3.5	6.2	7.1	8.0	9 5.44	45.39	20.46	5 7 59.59	— 10.88
	β Tauri	27	. .	59.5	0.5	1.6	2.5	3.6	23.3	26.3	27.4	28.5	. .	18 12.58	11.26	20.46	5 17 40.86	14.13
	Moon I	28	49.5	50.4	52.5	55.5	15.7	16.7	17.7	37.9	40.8	42.8	43.8	19 16.66	0.17	20.46	5 18 56.03	. .
	δ Orionis	29	58.8	59.7	0.6	1.4	4.2	23.4	42.4	45.1	46.1	46.9	47.8	25 23.31	— 0.09	20.46	5 25 2.76	— 11.53
3	Sun I	30	49.4	50.2	51.1	52.0	55.0	15.7	36.5	39.4	40.4	41.3	42.3	55 15.57	+ 0.10	20.94	18 54 54.73	. .
	Sun II	31	10.6	11.6	12.5	13.5	16.8	37.4	58.0	0.9	2.0	2.9	4.0	57 37.29	0.10	20.94	18 57 16.45	. .
	Venus I	32	10.3	11.2	12.2	13.2	16.4	37.1	58.2	1.0	2.1	3.1	4.1	21 37.17	0.09	20.94	19 21 16.32	+ 0.36
Y.	Mercury I	33	50.5	51.4	52.4	53.3	56.4	17.5	38.5	41.5	42.5	43.5	44.4	28 17.45	0.10	20.94	19 27 56.61	+ 0.18
	α Aquilæ	34	1.7	2.5	3.5	4.3	7.0	26.3	45.7	48.6	49.4	50.4	51.2	44 26.42	0.07	20.94	19 44 5.55	— 8.49
	α Cephei	35	45.3	47.2	49.3	51.3	56.8	37.7	18.6	24.1	26.2	28.2	30.0	15 37.70	+ 0.01	20.93	21 15 16.78	2.77
	β Aquarii	36	. .	39.5	40.5	41.4	42.4	43.2	0.7	3.6	4.6	5.4	6.4	24 52.77	— 11.19	20.92	21 24 20.66	9.53
	ε Pegasi	37	23.4	24.4	25.3	26.3	29.0	48.3	7.8	10.4	11.5	12.3	13.1	37 48.35	+ 0.05	20.92	21 37 27.48	8.88
	α Aquarii	38	41.2	42.1	43.0	43.9	46.7	5.8	55.0	57.8	58.6	59.5	0.3	59 5.81	0.06	20.92	21 58 44.95	9.43
	α Ceti	39	5.4	6.3	7.2	8.0	10.7	29.8	49.1	51.9	52.8	53.7	54.5	55 29.95	+ 0.06	20.88	2 55 9.13	11.19
	κ Persei	40	5.0	6.3	7.8	9.0	12.8	39.5	6.3	10.2	11.4	12.6	13.9	0 39.53	— 0.06	20.88	3 0 18.59	14.56
	δ Arietis	41	44.8	45.8	46.7	47.7	50.6	10.8	31.2	34.1	35.1	36.0	37.0	4 10.89	+ 0.01	20.88	3 3 50.02	12.30
	ι Persei	42	6.7	7.8	9.1	10.3	14.1	40.0	6.3	10.0	11.3	12.4	13.6	12 40.15	— 0.05	20.88	3 12 19.22	14.59
	* + 24° 55′	43	33.5	34.4	35.4	36.4	39.5	0.5	21.7	24.8	25.8	26.8	27.7	16 0.59	0.00	20.88	3 15 39.71	12.82
	Weisse 334	44	44.0	44.8	45.7	46.6	49.3	8.9	28.5	31.4	32.4	33.2	34.1	20 8.99	+ 0.03	20.88	3 19 48.14	11.91
	* + 7° 6′	45	52.0	53.0	53.8	54.8	57.4	. .	36.1	38.8	39.7	40.5	41.6	24 16.77	+ 0.03	20.88	3 23 55.92	11.60
	Weisse 428	46	. .	5.5	6.5	7.4	8.3	9.3	26.7	29.6	30.4	31.3	32.3	25 18.73	— 11.23	20.88	3 24 46.62	11.60
	B. Z. 506, 79	47	15.8	16.6	17.6	18.5	21.5	41.6	1.9	4.9	5.8	6.7	7.5	30 41.67	+ 0.02	20.88	3 30 20.81	12.48
	Radcliffe 1041	48	4.7	6.0	7.3	8.7	12.8	41.4	10.1	14.2	15.7	16.8	18.1	34 41.44	— 0.07	20.88	3 34 20.49	15.79
	Weisse 751	49	47.3	48.2	49.2	50.0	52.8	. .	32.1	34.9	35.7	36.7	37.6	40 12.45	+ 0.02	20.87	3 39 51.60	12.04
	Weisse 752	50	25.0	26.0	26.9	29.7	30.7	13.5	56.4	57.3	0.0	0.9	1.8	40 13.47	— 0.11	20.87	3 39 52.71	12.05
	Radcliffe 1084	51	. .	41.1	45.0	46.2	47.1	48.3	11.2	12.3	15.8	16.8	17.9	44 0.17	— 44.11	20.87	3 42 55.19	14.76
	B. Z. 391, 127	52	. .	. .	. .	7.5	8.5	9.4	10.3	11.3	. .	. .	. .	47 9.40	+ 0.03	20.87	3 46 48.56	12.68
	B. Z. 391, 128	53	. .	. .	.	24.1	25.1	26.0	27.0	27.9	. .	. .	. .	47 26.04	0.03	20.87	3 47 5.20	12.68
	ε Tauri	54	34.5	35.5	36.4	37.4	40.2	0.3	20.4	23.6	24.5	25.4	26.3	21 0.41	0.02	20.87	4 20 39.56	12.89
	B. Z. 330, 27	55	30.5	31.4	32.3	33.3	36.1	55.9	15.7	18.6	19.6	20.6	21.5	23 55.95	+ 0.02	—20.87	4 23 35.10	— 12.59

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 2, 1.2	— 20.46	0.000	— 0.087

9. Double star companion (10.3) distance estimated 10″; angle 287°.
14. Very unsteady.
16. Hazy.
22. Much blurred.

January 2, 0h. to 6h. n. = — 0.200 s.

January 2, 5h. 30m. Image west 0.47 r. Clamp east.
0.00. Clamp west.
Image west 0.35. Clamp east.
Image east 0.05. Clamp west.

The first reading clamp east is probably too great, owing to the length of time occupied in making it.

The first rough measure was west 0.38 r.

Observations of January 2, made clamp east; subsequent observations clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 3	85 Tauri	1	. .	45. 5	48. 4	49. 4	50. 2	51. 1	9. 0	10. 1	12. 8	13. 7	14. 5	25 0. 47	— 34. 80	—20. 87	4 24 4. 80	— 12. 60
	B. Z. 393, 95	2	. .	11. 3	14. 4	15. 4	16. 3	17. 3	35. 9	36. 9	39. 8	40. 7	41. 6	28 26. 96	36. 11	20. 87	4 27 29. 94	13. 16
	Weisse 732	3	8. 8	9. 7	10. 6	11. 6	32. 5	33. 4	34. 3	55. 4	56. 3	57. 1	58. 0	34 33. 43	— 0. 01	20. 87	4 34 12. 55	11. 68
Y.	Weisse 809	4	40. 9	41. 9	42. 9	43. 9	46. 5	5. 7	24. 8	27. 6	28. 5	29. 4	30. 2	38 5. 66	+ 0. 06	20. 87	4 37 44. 85	11. 32
	Weisse 888	5	40. 4	41. 3	42. 2	43. 1	45. 8	5. 0	24. 2	26. 9	27. 8	28. 7	29. 5	42 4. 99	0. 06	20. 87	4 41 44. 18	11. 33
	Lalande 9207	6	48. 9	49. 8	50. 7	51. 5	54. 4	13. 3	32. 5	35. 3	36. 2	37. 1	38. 0	47 13. 43	0. 06	20. 87	4 46 52. 62	11. 57
	Lalande 9261	7	54. 0	54. 9	55. 7	56. 7	59. 3	18. 5	37. 7	40. 4	41. 3	42. 1	42. 9	49 18. 50	0. 06	20. 87	4 48 57. 69	11. 58
	Lalande 9291	8	. .	. .	.	5. 7	6. 6	7. 4	8. 3	9. 2	. .	. .	.	50 7. 44	+ 0. 08	20. 87	4 49 46. 65	11. 58
	* + 1° 26′	9	. .	50. 8	51. 7	52. 6	53. 5	54. 4	11. 8	14. 5	15. 5	16. 4	17. 3	51 3. 85	— 11. 13	20. 86	4 50 31. 86	11. 59
	ε Leporis	10	36. 1	37. 1	38. 0	39. 1	41. 9	2. 6	23. 5	26. 3	27. 3	28. 4	29. 3	0 2. 69	+ 0. 13	20. 86	4 59 41. 96	9. 78
	B. A. C. 1615	†11	7. 7	8. 7	9. 8	10. 9	14. 1	36. 2	58. 4	1. 7	2. 8	3. 8	4. 8	6 36. 26	+ 0. 16	20. 86	5 6 15. 56	9. 13
	Lacaille 1779	12	55. 4	56. 4	57. 4	58. 5	1. 3	22. 4	43. 8	46. 9	47. 9	48. 8	49. 8	11 22. 60	0. 14	20. 86	5 11 1. 88	9. 46
	B. A. C. 1670	13	5. 0	6. 0	6. 9	7. 9	10. 8	31. 8	52. 9	56. 0	57. 1	58. 0	59. 0	16 31. 94	0. 14	20. 86	5 16 11. 22	9. 61
	Rumker 1450	14	20. 8	21. 7	22. 8	23. 7	26. 7	48. 0	9. 5	12. 5	13. 7	14. 7	15. 6	23 48. 15	+ 0. 14	20. 86	5 23 27. 43	13. 94
	O. Arg. N. 6032	15	. .	. .	. .	57. 2	59. 5	2. 1	4. 4	7. 0	. .	. .	. .	30 2. 04	— 0. 13	20. 86	5 29 41. 05	25. 34
	O. Arg. N. 6159	16	29. 6	32. 2	35. 1	37. 7	46. 3	45. 2	45. 2	53. 4	56. 2	58. 8	1. 8	36 45. 59	0. 23	20. 86	5 36 24. 50	27. 49
	O. Arg. N. 6250	17	. .	.	. .	2. 9	5. 4	8. 4	11. 2	14. 0	. .	. .	. .	43 8. 38	0. 17	20. 86	5 42 47. 35	28. 00
	O. Arg. N. 6362	18	4. 3	7. 3	10. 5	13. 5	22. 3	26. 0	30. 3	39. 3	42. 3	45. 5	48. 1	50 26. 31	— 0. 25	20. 86	5 50 5. 20	29. 00
	1 Geminorum	19	44. 6	45. 5	46. 4	47. 5	50. 5	11. 0	31. 9	35. 1	36. 0	37. 0	37. 9	56 11. 22	+ 0. 01	20. 86	5 55 50. 37	13. 67
	η Geminorum	20	33. 5	34. 4	35. 4	36. 4	39. 3	0. 1	20. 8	23. 8	24. 6	25. 6	26. 5	7 0. 04	0. 01	20. 85	6 6 39. 20	13. 60
	Moon I	21	39. 6	40. 5	41. 6	42. 5	45. 3	6. 4	27. 7	30. 7	31. 6	32. 5	33. 4	12 6. 53	+ 0. 01	20. 85	6 11 45. 59	. .
	μ Geminorum	22	37. 4	38. 3	39. 3	40. 2	43. 2	3. 9	24. 5	27. 5	28. 6	29. 5	30. 4	15 3. 89	0. 00	20. 85	6 14 43. 04	— 13. 62
	δ Ursæ Minoris, S. P.	23	17. 5	2. 0	46. 0	31. 5	. .	. .	. .	. .	. .	. .	. .	22 54. 25	— 6 30. 45	20. 85	18 16 2. 95	+ 87. 29
	γ Geminorum	24	45. 8	46. 7	47. 6	48. 5	51. 3	11. 3	31. 2	34. 0	35. 0	36. 1	37. 0	30 11. 32	+ 0. 02	20. 85	6 29 50. 49	— 13. 03
	51 Cephei	25	. .	. .	. .	33. 0	52. 0	10. 5	29. 0	46. 5	. .	. .	. .	36 10. 20	— 1. 24	20. 85	6 35 48. 11	— 129. 65
4	δ Ursæ Minoris, S. P.	26	18. 0	2. 5	. .	33. 0	47. 5	. .	. .	. .	. .	. .	. .	22 40. 25	— 6 15. 21	22. 13	18 16 2. 91	+ 87. 32
	γ Geminorum	27	46. 9	47. 8	48. 7	49. 7	52. 5	12. 6	32. 5	35. 3	36. 3	37. 3	38. 2	30 12. 53	+ 0. 04	22. 14	6 29 50. 43	— 13. 04
	γ Canis Majoris	28	32. 7	33. 5	34. 5	35. 4	38. 3	58. 1	18. 0	20. 8	21. 7	22. 7	23. 5	57 58. 11	0. 12	22. 16	6 57 36. 07	10. 55
N.	Moon I	†29	40. 1	41. 0	42. 0	4. 9	5. 8	6. 7	7. 7	8. 5	31. 5	32. 4	33. 4	4 6. 73	0. 04	22. 16	7 3 44. 61	. .
	Moon II	30	50. 0	51. 0	52. 0	53. 1	56. 0	16. 7	37. 5	40. 5	41. 4	42. 4	43. 3	6 16. 72	0. 03	22. 16	7 5 54. 59	. .
	λ Geminorum	31	12. 2	13. 1	14. 0	15. 0	17. 8	37. 7	57. 8	0. 6	1. 6	2. 5	3. 4	10 37. 79	0. 04	22. 17	7 10 15. 66	13. 00
	δ Geminorum	32	54. 6	55. 6	56. 7	57. 6	0. 4	21. 1	41. 8	44. 9	45. 8	46. 7	47. 7	12 21. 17	0. 02	22. 17	7 11 59. 02	13. 47
	α Canis Minoris	33	7. 7	8. 6	9. 6	10. 4	13. 1	32. 4	51. 5	54. 3	55. 3	56. 2	57. 0	32 32. 37	0. 07	22. 18	7 32 10. 26	11. 90
	κ Geminorum	34	8. 2	9. 2	10. 3	11. 3	14. 2	35. 3	56. 2	59. 4	0. 4	1. 4	2. 3	36 35. 30	0. 02	22. 19	7 36 13. 13	13. 63
	α Ophiuchi	35	31. 5	32. 5	33. 5	34. 3	55. 8	56. 6	57. 6	18. 9	20. 1	21. 0	21. 9	28 56. 70	+ 0. 05	22. 57	17 28 34. 18	— 8. 04
	δ Ursæ Minoris	36	46. 5	1. 5	17. 0	1. 5	11. 0	25. 0	40. 5	48. 0	34. 5	49. 0	5. 0	16 25. 41	— 0. 04	22. 60	18 16 2. 77	+ 87. 33
5	Sun I	37	38. 4	39. 4	40. 4	41. 4	4. 3	5. 2	6. 1	28. 9	29. 9	30. 9	31. 8	4 5. 15	+ 0. 09	22. 63	19 3 42. 61	. .
	Sun II	38	0. 2	1. 0	2. 0	3. 0	6. 0	26. 7	47. 4	50. 3	51. 4	52. 4	53. 3	6 26. 70	+ 0. 09	22. 63	19 6 4. 16	. .
	ε Delphini	39	. .	21. 9	24. 7	25. 6	26. 6	27. 4	45. 0	46. 0	48. 7	49. 5	50. 3	27 36. 57	— 34. 07	22. 68	20 26 39. 82	— 8. 37
	α Cygni	40	34. 0	35. 3	36. 6	40. 4	6. 2	7. 4	8. 5	34. 5	38. 3	39. 6	40. 7	37 7. 41	+ 0. 12	22. 69	20 36 44. 84	5. 25
	ε Piscium	41	49. 3	50. 2	51. 2	52. 0	54. 8	14. 0	33. 3	36. 1	37. 0	37. 9	38. 8	56 14. 05	0. 07	22. 85	0 55 51. 27	10. 47
	B. A. C. 306	42	. .	. .	. .	26. 0	27. 2	28. 2	29. 3	30. 2	. .	. .	. .	58 28. 18	0. 20	22. 86	0 58 5. 52	9. 44
	Lacaille 329	43	27. 3	28. 5	29. 7	30. 7	34. 0	57. 8	21. 7	25. 0	26. 1	27. 3	28. 3	6 57. 85	0. 18	22. 86	1 6 35. 17	9. 31
	Polaris	44	. .	. .	. .	26. 5	3. 0	37. 0	14. 0	49. 0	. .	. .	. .	9 37. 90	0. 32	22. 86	1 9 15. 36	74. 26
	Lacaille 362	45	58. 8	51. 8	53. 0	53. 9	57. 0	19. 1	41. 1	44. 3	45. 3	46. 3	47. 2	14 19. 07	0. 16	22. 87	1 13 56. 36	9. 53
	B. A. C. 418	†46	0. 8	1. 8	2. 8	5. 7	26. 0	26. 9	27. 8	48. 0	51. 0	52. 0	53. 1	17 26. 90	0. 14	22. 87	1 17 4. 17	9. 68
	Lacaille 403	47	47. 0	48. 0	49. 0	50. 0	52. 8	13. 6	34. 5	37. 4	38. 3	39. 3	40. 2	21 13. 65	+ 0. 13	22. 87	1 20 50. 91	9. 74
	η Piscium	48	. .	53. 3	56. 2	57. 1	58. 1	59. 0	16. 8	17. 8	20. 4	21. 4	22. 3	25 8. 24	— 34. 60	22. 87	1 24 10. 77	10. 96
	Lacaille 453	49	. .	. .	. .	23. 1	24. 2	25. 1	26. 1	27. 2	. .	. .	. .	28 25. 14	+ 0. 18	22. 88	1 28 2. 44	9. 51
	Lacaille 480	50	52. 7	53. 8	54. 8	55. 9	59. 0	21. 1	43. 0	46. 3	47. 3	48. 5	49. 4	33 21. 07	+ 0. 16	22. 88	1 32 58. 35	9. 46
	ο Piscium	51	. .	32. 1	33. 1	33. 8	34. 8	35. 7	53. 2	56. 0	57. 0	57. 9	58. 8	38 45. 24	— 11. 24	22. 88	1 38 11. 12	10. 87
	Lacaille 535	52	. .	. .	. .	4. 6	5. 7	6. 6	7. 6	8. 6	. .	. .	. .	44 6. 62	+ 0. 18	22. 89	1 43 43. 91	9. 42
	γ^1 Arietis	53	. .	. .	. .	23. 5	24. 5	25. 4	26. 3	27. 4	. .	. .	. .	46 25. 42	+ 0. 08	22. 89	1 46 2. 61	11. 36
	γ^2 Arietis	54	. .	45. 6	48. 5	49. 4	50. 5	51. 3	9. 7	10. 6	13. 3	14. 3	15. 2	47 0. 84	— 35. 40	22. 89	1 46 2. 55	11. 36
	50 Cassiopeæ	55	. .	. .	. .	8. 6	10. 4	14. 3	17. 1	19. 7	. .	. .	. .	52 14. 02	+ 0. 03	—22. 89	1 51 51. 16	— 18. 26

11. Too hazy to estimate magnitudes.
29. Limb nearly a straight line for 1′ on each side of the point observed.
46. Duplex, companion (10. 5) distance 3″; angle 355°.

January 3, 6h. 45m. Image east 0. 13. r. Clamp west.

January 3, 18h. to 22h. n. = — 0. 060. s.
2h. to 7h. — 0. 145.
4, 6h. to 8h. — 0. 140.
4–5, 17h. to 21h. — 0. 085.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 3, 1. 7	— 20. 89	+ 0. 008	+ 0. 062
4, 7. 0	22. 16	— 0. 045	0. 075
5, 3. 1	— 22. 94	— 0. 039	+ 0. 085

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 5	Lacaille 598 . .	1	19.5	20.6	21.5	22.6	25.6	46.5	7.8	10.8	11.8	12.9	13.8	54 46.67	+ 0.14	−22.89	1 54 23.92	− 9.61
	α Arietis	2	25.2	26.3	27.3	28.2	31.2	51.8	12.7	15.6	16.6	17.6	18.6	59 51.92	0.05	22.90	1 59 29.07	11.77
	Lacaille 639 . .	3	42.2	43.2	44.1	45.2	48.1	8.9	29.9	32.7	33.8	34.8	35.7	3 8.96	0.05	22.90	2 2 46.11	9.67
N.	ξ^{1} Ceti	4	44.2	45.1	46.0	49.6	8.1	8.9	9.9	28.3	32.0	32.8	33.7	6 8.96	+ 0.07	22.90	2 5 46.13	11.09
	ξ^{2} Ceti	5	. .	15.4	16.4	17.2	18.1	18.9	36.6	39.3	40.2	41.2	42.0	21 28.53	− 11.23	22.91	2 20 54.39	11.19
	γ Eridani	6	. .	. .	. .	. .	. .	. .	23.0	25.7	26.6	27.6	28.4	52 26.26	− 22.96	22.97	3 51 40.33	10.31
	Lacaille 1317 . .	7	35.8	36.9	37.9	38.8	41.9	3.3	24.8	28.0	28.9	30.0	30.8	56 3.37	+ 0.14	22.97	3 55 40.54	9.39
	Lacaille 1329 . .	†8	48.1	49.2	50.2	51.2	14.4	15.4	16.4	39.7	40.8	41.8	42.8	58 15.45	0.14	22.97	3 57 52.62	9.44
	O. Arg. S. 2938 .	9	53.8	54.8	55.8	56.7	59.7	. .	41.4	44.4	. .	46.4	47.3	10 17 81	2.88	22.98	4 9 57.71	9.64
	B. A. C. 1355 . .	10	47.7	48.7	49.8	50.7	53.7	15.0	36.3	39.4	40.4	41.4	42.3	16 15.04	0.14	22.99	4 15 52.19	9.46
	ε Tauri	11	36.7	37.6	38.5	39.5	42.4	2.5	22.8	25.6	26.6	27.5	28.5	21 2.56	0.06	22.99	4 20 39.63	12.88
	Lacaille 1504 . .	12	54.7	55.6	56.6	57.6	0.6	. .	43.1	46.0	47.1	48.2	49.2	27 21.87	+ 0.14	22.99	4 26 59.02	9.51
	Lacaille 1509 . .	13	. .	16.7	19.7	20.7	21.6	22.7	42.0	43.0	45.9	46.8	47.7	28 32.68	− 37.14	22.99	4 27 32.55	9.48
	Lacaille 1541 . .	14	23.6	24.6	25.7	29.6	50.3	51.3	52.4	13.2	17.2	18.3	19.2	33 51.40	+ 0.15	23.00	4 33 28.55	9.29
	Lacaille 1549 . .	15	. .	37.0	38.0	39.0	39.9	40.9	0.8	3.8	4.9	6.0	6.9	35 51.72	− 12.57	23.00	4 35 16.15	9.27
	Lacaille 1613 . .	16	57.6	58.6	59.6	0.7	3.7	25.2	46.8	49.9	50.9	51.9	53.0	45 25.26	+ 0.15	23.00	4 45 2.41	9.37
	ι Aurigæ	17	. .	28.2	29.3	30.3	31.3	32.4	53.1	56.3	57.5	58.5	59.6	48 43.65	− 13.29	23.01	4 48 7.35	14.49
	* — 28° 47′ . . .	18	. .	32.6	33.7	34.7	35.8	36.8	22.7	23.7	26.7	27.7	28.6	54 0.30	− 25.34	23.01	4 53 11.95	9.25
	Lacaille 1673 . .	19	. .	. .	. .	6.5	7.5	8.5	9.6	10.5	. .	. .	. .	54 8.52	+ 0.18	23.01	4 53 45.69	9.25
	11 Orionis	20	44.5	45.4	47.3	50.0	9.1	10.0	10.9	29.8	32.5	34.5	35.4	57 9.95	0.06	23.01	4 56 47.00	− 12.73
	ε Ursæ Minoris, S. P.	21	. .	. .	. .	32.2	24.8	19.5	12.3	6.2	. .	. .	. .	0 19.00	0.27	23.01	16 59 56.26	+ 30.71
	6 Cancri	22	. .	. .	. .	29.8	30.8	31.6	32.7	33.7	. .	. .	. .	55 31.72	0.07	23.13	7 55 8.66	− 13.85
	Moon II	23	32.4	33.3	34.3	35.3	38.2	58.6	19.1	21.9	22.9	23.9	24.8	56 58.61	+ 0.06	23.13	7 56 35.54	. .
	λ Ursæ Minoris, S. P.	24	. .	. .	. .	35.0	47.0	5.0	15.0	30.0	. .	. .	. .	0 2.40	− 0.45	23.13	9 59 38.82	+ 253.11
	Lacaille 3229 . .	25	23.4	24.4	25.6	26.6	50.7	51.7	52.7	16.8	18.0	19.1	19.9	10 51.72	+ 0.15	23.14	8 10 28.73	− 9.70
	B. A. C. 2790 . .	†26	. .	47.1	48.2	49.2	50.1	51.0	11.5	14.6	15.6	16.6	17.7	13 2.16	− 12.71	23.14	8 12 26.31	9.72
	d^{1} Cancri	27	37.7	31.5	32.6	33.5	36.4	56.6	16.8	19.7	20.6	21.6	22.6	15 56.60	+ 0.06	23.14	8 15 33.52	12.90
	B. A. C. 2846 . .	28	. .	28.2	29.3	30.2	31.1	32.2	51.4	54.5	55.5	56.5	57.4	22 42.63	− 12.29	23.15	8 22 7.19	10.02
	η Cancri	29	46.2	47.3	48.2	49.3	52.1	. .	33.1	35.9	37.0	38.0	38.9	25 12.60	+ 0.05	23.15	8 24 49.50	13.03
	Lacaille 3388 . .	30	. .	. .	. .	31.1	32.3	33.1	34.1	35.1	. .	. .	. .	28 33.14	0.17	23.15	8 28 10.16	10.11
	B. A. C. 2910 . .	31	11.4	12.4	13.3	14.5	17.5	38.5	59.9	2.9	4.0	5.0	6.0	31 38.67	+ 0.14	23.15	8 31 15.66	10.03
	g Mali	32	. .	24.5	25.5	26.4	27.5	28.4	47.8	50.7	51.8	52.9	53.8	32 38.93	− 12.29	23.15	8 32 3.49	10.05
	Lacaille 3474 . .	†33	18.8	19.9	20.9	21.9	. .	47.0	8.7	12.0	13.0	14.0	14.9	37 49.11	2.04	23.15	8 37 23.92	9.87
	ε Hydræ	34	. .	. .	. .	. .	. .	. .	38.7	39.7	42.4	43.2	44.1	40 41.62	44.95	23.16	8 39 33.51	11.92
6	o^{1} Eridani	35	. .	34.8	35.7	36.6	37.5	38.4	55.8	58.6	59.6	0.4	1.4	5 47.88	11.18	23.92	4 5 12.78	10.81
	B. Z. 330, 7 . . .	36	. .	46.8	49.6	50.6	51.5	52.5	10.5	11.5	14.2	15.1	16.0	10 1.83	− 34.83	23.92	4 9 3.08	12.52
	ε Tauri	37	37.5	38.4	39.4	40.4	43.2	3.4	23.6	26.6	27.6	28.6	29.4	21 3.46	+ 0.05	23.93	4 20 39.58	12.87
Y.	O. Arg. N. 5260 .	38	17.7	19.1	20.6	22.2	26.4	57.0	27.7	32.1	33.5	34.9	36.3	44 57.05	− 0.01	23.95	4 44 33.09	17.53
	B. Z. 393, 127 . .	39	. .	. .	. .	. .	. .	. .	43.0	46.0	47.0	48.0	48.9	52 46.58	24.17	23.95	4 51 58.46	13.37
	B. Z. 393, 128 . .	40	. .	6.7	9.7	10.7	11.6	12.7	31.4	32.4	35.4	36.2	37.0	53 22.38	− 36.25	23.95	4 52 22.18	13.37
	B. Z. 398, 111 . .	41	46.8	47.8	48.9	50.0	53.2	. .	37.4	40.7	41.7	42.7	43.6	56 15.28	+ 0.03	23.96	4 55 51.35	14.22
	B. Z. 398, 112 . .	42	. .	. .	. .	14.6	15.6	16.5	17.6	18.6	. .	. .	. .	56 16.58	0.06	23.96	4 55 52.68	14.22
	B. Z. 398, 116 . .	43	40.8	42.0	43.0	44.0	47.1	9.3	31.4	34.7	35.7	36.8	37.8	0 9.33	0.03	23.96	4 59 45.40	14.25
	B. Z. 513, 5 . . .	44	49.0	50.1	51.2	52.2	55.2	17.4	39.5	42.7	43.7	44.8	45.8	4 17.42	+ 0.03	23.96	5 3 53.49	14.27
	* + 30° 14′ . . .	45	. .	. .	. .	. .	. .	. .	32.0	33.0	36.1	37.0	38.0	6 35.22	− 51.72	23.96	5 5 19.54	14.28
	B. Z. 513, 7 . . .	46	27.3	28.3	29.4	30.3	33.5	55.7	17.9	21.0	22.1	23.0	24.1	5 55.69	+ 0.03	23.96	5 5 31.76	14.28
	B. Z. 513, 14 . .	47	12.6	13.6	14.6	15.7	18.8	41.0	3.2	6.3	7.4	8.4	9.3	11 40.99	0.03	23.97	5 11 17.05	14.33
	β Tauri	48	36.8	37.7	38.8	39.7	42.9	4.7	26.5	29.5	30.6	31.6	32.6	18 4.67	+ 0.04	23.97	5 17 40.74	14.13
	* + 70° 16′ . . .	49	13.9	16.7	19.6	22.1	29.8	26.5	23.5	31.2	34.0	36.3	39.0	23 26.60	− 0.08	23.97	5 23 2.55	26.45
	O. Arg. N. 5930 .	50	35.6	38.3	40.7	49.1	43.3	45.7	48.4	42.3	50.4	53.2	55.9	23 45.72	0.09	23.97	5 23 21.66	26.45
	* + 70° 12′ . . .	51	7.4	10.4	12.8	15.6	23.6	. .	17.4	25.1	28.4	30.8	34.4	32 2.59	0.10	23.98	5 31 38.51	26.50
	O. Arg. N. 6082 .	52	. .	. .	. .	28.6	31.5	33.9	36.5	39.4	. .	. .	. .	32 33.98	0.01	23.98	5 32 9.99	26.44
	O. Arg. N. 6159 .	53	32.1	34.8	37.9	40.6	48.6	48.2	47.8	56.2	59.3	2.0	4.8	36 48.39	0.09	23.98	5 36 24.32	27.49
	* + 71° 37′ . . .	†54	50.3	53.1	55.7	59.3	7.3	. .	9.0	17.9	20.6	23.3	25.9	43 8.24	0.11	23.99	5 42 44.14	27.90
	O. Arg. N. 6250 .	55	. .	. .	. .	5.4	8.4	11.0	14.0	16.8	. .	. .	. .	43 11.12	− 0.02	−23.99	5 42 47.11	− 27.84

CORRECTIONS, &c

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 5, 3.1	− 22.94	− 0.039	+ 0.085
6, 6.9	− 24.04	− 0.043	+ 0.090

8. Hazy.
26. *The sets discordant.*
33. Hazy.
54. Declination a little uncertain.

January 5, 0h. to 9h. n. = − 0.100 s.
January 6, 4h. to 10h. − 0.125.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
363.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
n. 6	* + 71° 37′	1	- -	- -	- -	-	- -	- -	23. 8	26. 8	34. 6	37. 8	41. 0	45 32. 80	— 2 21. 83	—23. 99	5 42 46. 98	— 27. 94
	O. Arg. N. 6356	2	- -	- -	- -	46. 2	49. 0	51. 5	54. 6	57. 7	- -	- -	- -	49 51. 80	0. 02	23. 99	5 49 27. 79	28. 79
	O. Arg. N. 6390	3	57. 5	0. 3	3. 1	6. 2	15. 0	18. 1	21. 0	30. 2	33. 1	36. 0	38. 9	52 18. 13	0. 10	24. 00	5 51 54. 03	28. 71
Y.	* + 73° 34′	4	- -	- -	- -	18. 3	21. 6	24. 3	27. 7	31. 1	- -	- -	- -	57 24. 60	0. 02	24. 00	5 57 0. 58	30. 20
	* + 73° 35′	5	- -	- -	- -	33. 4	36. 7	39. 5	43. 0	45. 9	- -	- -	- -	58 39. 70	0. 02	24. 00	5 58 15. 68	30. 24
	O. Arg. N. 6682	6	38. 0	41. 0	44. 0	47. 1	56. 7	4. 0	11. 3	20. 7	24. 2	27. 5	30. 3	9 4. 07	— 0. 10	24. 01	6 8 39. 96	— 30. 15
	δ Ursæ Minoris, S. P.	7	- -	- -	- -	57. 0	41. 5	27. 5	12. 0	56. 0	- -	- -	- -	16 26. 80	+ 0. 19	24. 01	18 16 2. 98	+ 87. 35
	O. Arg. N. 6864	8	- -	0. 2	12. 1	16. 5	20. 1	24. 1	37. 9	41. 7	53. 1	57. 0	0. 7	22 2. 34	— 2 23. 67	24. 02	6 19 14. 65	— 34. 63
	γ Geminorum	9	48. 8	49. 8	50. 7	51. 6	54. 5	14. 4	34. 5	37. 2	38. 2	39. 1	40. 0	30 14. 44	+ 0. 06	24. 02	6 29 50. 48	13. 06
	51 Cephei	10	- -	- -	- -	35. 0	54. 0	11. 5	33. 0	50. 0	- -	- -	- -	36 12. 70	— 0. 26	24. 03	6 35 48. 41	129. 92
	η Cancri	11	- -	11. 7	12. 6	13. 5	14. 5	15. 4	34. 0	37. 0	38. 0	38. 9	39. 9	25 25. 55	— 11. 94	24. 11	8 24 49. 50	13. 01
	c¹ Cancri	12	41. 6	42. 5	43. 4	44. 4	47. 2	6. 6	25. 9	28. 7	29. 7	30. 5	31. 5	30 6. 55	+ 0. 07	24. 11	8 29 42. 51	12. 22
	B. Z. 349, 10	13	40. 3	41. 4	42. 4	43. 4	46. 3	8. 1	29. 7	32. 8	33. 9	34. 9	35. 9	36. 8. 10	0. 04	24. 11	8 35 44. 03	13. 51
	ε Hydræ	14	32. 9	33. 8	34. 7	35. 6	38. 4	57. 7	16. 8	19. 6	20. 6	21. 5	22. 4	39 57. 64	0. 08	24. 12	8 39 33. 60	11. 94
	Moon II	15	52. 0	53. 0	54. 0	54. 9	57. 7	17. 7	37. 9	40. 5	41. 6	42. 5	43. 5	46 17. 75	0. 06	24. 12	8 45 53. 69	- -
	α Cancri	16	0. 8	1. 8	2. 7	3. 6	6. 3	26. 0	45. 5	48. 4	49. 4	50. 3	51. 1	51 25. 99	0. 06	24. 12	8 51 1. 93	12. 36
	κ Cancri	17	20. 9	21. 8	22. 7	23. 7	26. 4	45. 9	5. 4	8. 2	9. 1	10. 0	11. 0	0 45. 92	0. 07	24. 13	9 0 21. 86	12. 12
	B. Z. 347, 31	18	19. 7	20. 9	21. 9	22. 9	25. 8	47. 3	8. 9	12. 0	13. 0	14. 0	14. 9	2 47. 39	0. 04	24. 13	9 2 23. 30	13. 18
	B. Z. 347, 39	19	5. 9	6. 8	7. 8	8. 8	11. 8	33. 3	54. 8	57. 9	58. 9	59. 9	0. 9	8 33. 35	0. 03	24. 14	9 8 9. 24	13. 12
	83 Cancri	20	20. 5	21. 5	22. 4	23. 3	26. 1	46. 2	6. 4	9. 4	10. 4	11. 4	12. 4	11 46. 36	0. 05	24. 14	9 11 22. 27	12. 45
. 7	ε Piscium	†21	51. 4	52. 4	53. 2	54. 1	56. 8	16. 0	35. 4	38. 1	39. 0	39. 9	40. 8	56 16. 10	+ 0. 08	- -	- - - -	10. 45
	Polaris	22	- -	- -	- -	30. 0	7. 0	40. 0	16. 0	51. 0	- -	- -	- -	9 40. 80	— 1. 09	24. 93	1 9 14. 78	72. 42
	B. A. C. 418	23	1. 8	2. 9	3. 8	4. 9	7. 7	28. 8	50. 0	53. 0	53. 9	55. 1	56. 0	17 28. 90	+ 0. 18	24. 94	1 17 4. 14	9. 65
N.	Lacaille 407	24	24. 9	25. 9	26. 8	27. 8	30. 7	51. 6	12. 3	15. 2	16. 3	17. 2	18. 2	21 51. 54	0. 17	24. 94	1 21 26. 77	9. 73
	η Piscium	25	10. 3	11. 2	12. 2	13. 0	15. 8	35. 6	55. 4	58. 2	59. 0	0. 1	1. 0	24 35. 62	0. 06	24. 94	1 24 10. 74	10. 94
	Lacaille 453	26	- -	- -	- -	25. 0	26. 2	27. 0	28. 2	29. 1	- -	- -	- -	28 27. 10	0. 23	24. 94	1 28 2. 39	9. 48
	B. A. C. 504	27	- -	- -	- -	47. 9	49. 1	50. 0	51. 0	52. 0	- -	- -	- -	32 50. 00	0. 21	24. 94	1 32 25. 27	9. 61
	o Piscium	28	11. 2	12. 1	13. 0	14. 0	16. 6	36. 0	55. 4	58. 1	59. 1	0. 0	0. 8	38 36. 03	0. 08	24. 95	1 38 11. 16	10. 85
	Lacaille 535	29	40. 3	41. 4	42. 4	43. 6	46. 6	8. 7	30. 6	33. 7	34. 8	35. 9	36. 8	44 8. 62	0. 20	24. 95	1 43 43. 87	9. 39
	Lacaille 566	30	- -	- -	- -	1. 2	2. 3	3. 3	4. 3	5. 3	- -	- -	- -	50 3. 28	0. 23	24. 95	1 49 38. 56	9. 37
	Lacaille 607	31	11. 1	12. 1	13. 2	14. 2	17. 0	37. 7	58. 4	1. 4	2. 4	3. 3	4. 3	56 37. 74	+ 0. 17	24. 96	1 56 12. 95	9. 70
	B. A. C. 643	†32	- -	45. 0	46. 0	46. 8	47. 9	48. 9	9. 2	- -	13. 2	14. 2	15. 3	58 58. 50	— 11. 37	24. 96	1 58 22. 17	9. 33
	Lacaille 639	33	45. 2	46. 2	47. 2	50. 0	9. 9	10. 8	11. 8	31. 7	34. 7	35. 7	36. 7	3 10. 90	+ 0. 17	24. 96	2 2 46. 11	9. 64
	ξ¹ Ceti	34	46. 2	47. 0	48. 0	48. 9	51. 5	- -	9. 1	10. 1	10. 8	11. 8	12. 7	5 59. 61	11. 40	24. 96	2 5 46. 05	11. 07
	Lacaille 678	35	44. 2	45. 1	46. 2	47. 2	9. 9	10. 9	11. 9	34. 9	35. 9	37. 0	37. 9	9 11. 01	0. 18	24. 96	2 8 46. 23	9. 61
	Lacaille 699	36	38. 8	39. 9	40. 9	43. 6	4. 7	25. 7	28. 7	29. 8	30. 8	- -	- -	14 4. 77	+ 0. 18	24. 96	2 13 39. 99	9. 60
	B. A. C. 743	37	40. 7	41. 6	42. 7	43. 7	44. 7	- -	4. 4	7. 4	8. 4	9. 4	10. 3	17 55. 33	— 12. 45	24. 97	2 17 17. 91	9. 41
	Lacaille 744	38	7. 8	8. 8	9. 9	11. 0	13. 8	35. 3	56. 8	59. 9	0. 9	1. 8	2. 8	22 35. 35	+ 0. 19	24. 97	2 22 10. 57	9. 45
	Lacaille 771	39	46. 4	47. 4	48. 5	49. 5	52. 3	13. 3	34. 2	37. 0	38. 1	39. 1	40. 0	26 13. 25	0. 18	24. 97	2 25 48. 46	9. 62
	Lacaille 796	40	18. 4	19. 4	20. 5	21. 4	24. 3	45. 4	6. 5	9. 5	10. 5	11. 5	12. 4	30 45. 44	0. 18	24. 97	2 30 20. 65	9. 57
	Lacaille 814	41	- -	- -	- -	29. 8	30. 8	31. 9	32. 9	33. 9	- -	- -	- -	33 31. 86	0. 23	24. 97	2 33 7. 12	9. 34
	γ Ceti	42	14. 2	15. 2	16. 2	17. 0	19. 6	38. 8	57. 9	0. 6	1. 6	2. 5	3. 3	36 38. 81	+ 0. 09	24. 97	2 36 13. 93	10. 98
	B. A. C. 883	43	22. 4	23. 5	24. 5	25. 4	26. 3	- -	46. 2	49. 3	50. 3	51. 3	52. 2	44 37. 14	— 12. 55	24. 98	2 43 59. 61	9. 31
	Lacaille 908	44	8. 0	9. 0	10. 0	11. 0	33. 6	34. 5	35. 5	58. 2	59. 3	0. 2	1. 3	47 34. 60	+ 0. 17	24. 98	2 47 9. 79	9. 67
	Lacaille 932, (1st *)	45	- -	- -	- -	35. 9	36. 9	37. 8	38. 7	39. 8	- -	- -	- -	51 37. 82	0. 21	24. 98	2 51 13. 05	9. 49
	Lacaille 932, (2d *)	46	12. 2	13. 1	14. 1	15. 2	17. 9	- -	0. 4	3. 3	4. 4	5. 5	6. 3	51 39. 24	0. 17	24. 98	2 51 14. 43	9. 49
	B. A. C. 940	47	33. 3	34. 3	35. 4	36. 4	39. 3	- -	58. 6	59. 6	0. 5	1. 6	2. 6	53 48. 16	+ 12. 63	24. 98	2 53 35. 81	9. 47
	α Ceti	48	32. 0	33. 1	34. 0	34. 8	35. 7	- -	53. 0	55. 9	56. 9	57. 7	58. 5	55 45. 16	— 11. 13	24. 98	2 55 9. 05	11. 16
	Lacaille 983	49	33. 2	34. 4	35. 4	36. 6	39. 7	2. 3	25. 2	28. 5	29. 7	- -	31. 7	1 59. 67	+ 3. 04	24. 99	3 1 37. 72	8. 97
	Lacaille 1004	50	- -	- -	- -	19. 4	20. 6	21. 6	22. 6	23. 6	- -	- -	- -	7 21. 56	0. 25	24. 99	3 6 56. 82	8. 96
	γ Tauri	51	1. 9	2. 7	3. 7	4. 7	7. 5	27. 2	47. 1	49. 9	50. 9	51. 8	52. 7	12 27. 28	+ 0. 06	25. 02	4 12 2. 32	12. 52
	κ Cancri	52	- -	- -	- -	- -	- -	- -	29. 6	30. 6	33. 1	34. 0	34. 9	1 32. 44	— 45. 51	25. 17	9 0 21. 76	12. 15
	ε Mali	53	- -	8. 2	9. 0	10. 0	13. 3	35. 2	57. 5	0. 5	1. 7	2. 6	3. 5	4 38. 15	— 2. 63	25. 17	9 4 10. 35	9. 99
	Lacaille 3739	54	12. 7	13. 7	14. 7	15. 7	18. 8	41. 0	3. 0	6. 3	7. 2	8. 2	9. 2	9 40. 95	+ 0. 20	25. 17	9 9 15. 98	10. 01
	Lacaille 3788	55	50. 8	51. 7	52. 8	53. 7	56. 9	18. 7	40. 5	43. 5	44. 7	45 8	46. 6	15 18. 70	+ 0. 19	—25. 17	7 14 53. 72	— 10. 12

January 6, 9h. 20m. Image east $\overset{r.}{0.23}$. Clamp west.
21. Recorded on fillet.
32. c_1 and c_2 doubtful; D_2 missing.
January 7, 0h. to 10 h. n. = $-\overset{s.}{0.150}$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 7, 6. 1	— 25. 08	— 0. 030	+ 0. 100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 7	B. A. C. 3207	1	15. 9	16. 9	17. 9	18. 9	22. 0	43. 6	5. 4	8. 5	9. 6	10. 7	11. 6	17 43. 73	+ 0 19	—25. 18	9 17 18. 74	— 10. 13
	a Hydræ	†2	53. 9	54. 8	55. 7	56. 7	59. 3	18. 7	38. 0	40. 7	41. 5	42. 6	43. 4	21 18. 66	+ 0. 12	25. 18	9 20 53. 60	11. 08
	d Ursæ Majoris	3	. .	. .	. .	43. 7	45. 8	48. 5	51. 5	54. 3	. .	. .	. .	22 48. 56	— 0. 08	25. 18	9 22 23. 30	21. 31
	Lacaille 3892	4	18. 0	19. 0	20. 1	21. 1	24. 2	45. 8	7. 5	10. 5	11. 6	12. 6	13. 7	26 45. 83	+ 0. 19	25. 18	9 26 20. 84	10. 18
N.	Lacaille 3923	5	23. 7	24. 8	25. 8	26. 7	29. 7	50. 7	11. 8	14. 6	15. 8	16. 6	17. 6	30 50. 71	0. 18	25. 18	9 30 25. 71	10. 38
	Moon II	6	4. 4	5. 4	8. 1	26. 2	27. 2	28. 0	28. 8	29. 7	47. 6	50. 6	51. 5	34 27. 95	0. 09	25. 18	9 34 2. 86	. .
	ε Leonis	7	4. 8	5. 7	6. 7	7. 6	10. 7	31. 4	52. 7	55. 6	56. 7	57. 8	58. 8	38 31. 68	0. 04	25. 19	9 38 6. 53	12. 59
	π Leonis	8	0. 8	1. 6	2. 4	3. 4	6. 0	25. 5	44. 9	47. 5	48. 4	. .	50. 3	53 23. 08	2. 48	25. 19	9 53 0. 37	11. 70
9	Sun II	9	32. 8	33. 7	34. 8	35. 8	38. 7	59. 3	20. 0	23. 2	24. 0	25. 0	25. 8	23 59. 37	0. 18	26. 03	19 23 33. 52	70. 52
	σ Sculptoris	10	51. 4	52. 5	53. 5	54. 5	57. 8	. .	43. 0	46. 3	47. 4	48. 4	49. 4	56 20. 42	0. 22	26. 23	0 55 54. 41	8. 98
	B. A. C. 306	11	. .	. .	. .	29. 1	30. 2	31. 3	32. 4	33. 3	. .	. .	. .	58 31. 26	0. 27	26. 23	0 58 5. 30	9. 37
	ζ Piscium	12	37. 2	38. 0	38. 9	39. 8	42. 4	. .	21. 1	23. 8	24. 8	25. 6	26. 4	7 1. 80	0. 09	26. 23	1 6 35. 66	10. 50
	B. A. C. 369	13	. .	. .	. .	1. 4	2. 3	3. 2	4. 1	5. 0	. .	. .	. .	7 3. 20	+ 0. 12	26. 23	1 6 37. 09	10. 50
	Polaris	14	. .	. .	. .	. .	3. 5	38. 0	15. 0	50. 5	. .	. .	. .	9 56. 75	— 17. 58	26. 24	1 9 12. 93	70. 53
	θ Ceti	15	13. 0	13. 9	14. 8	15. 7	18. 4	37. 8	57. 2	59. 9	0. 9	1. 8	2. 5	17 37. 81	+ 0. 14	26. 24	1 17 11. 71	10. 11
	Lacaille 407	16	26. 2	27. 0	28. 1	29. 0	51. 7	52. 6	53. 6	16. 4	17. 4	18. 4	19. 4	21 52. 70	0. 19	26. 24	1 21 26. 65	9. 70
	B. A. C. 452	17	54. 9	55. 9	56. 8	57. 8	1. 0	22. 3	43. 8	47. 0	48. 0	49. 0	49. 9	24 22. 40	0. 20	26. 25	1 23 56. 35	9. 54
	Lacaille 438	18	. .	. .	. .	20. 0	20. 8	21. 8	. .	. .	. .	. .	. .	26 20. 87	0. 23	26. 25	1 25 54. 85	9. 52
	Lacaille 456	19	22. 2	23. 3	24. 2	25. 2	28. 2	49. 1	10. 2	13. 2	14. 2	15. 2	16. 1	28 49. 19	0. 20	26. 25	1 28 23. 14	9. 63
	ν Piscium	20	21. 0	22. 0	22. 9	23. 7	26. 5	45. 7	4. 8	7. 6	8. 5	9. 4	10. 3	34 45. 67	0. 11	26. 25	1 34 19. 53	10. 65
	Lacaille 509	21	. .	. .	. .	5. 5	6. 6	7. 5	8. 6	9. 5	. .	. .	. .	39 7. 54	0. 25	26. 26	1 38 41. 53	9. 39
	β Arietis	22	6. 2	7. 1	8. 2	9. 1	31. 3	32. 3	33. 2	55. 6	56. 6	57. 5	58. 4	47 32. 32	0. 08	26. 26	1 47 6. 14	11. 41
	Lacaille 570	23	41. 0	41. 9	43. 0	43. 9	47. 0	8. 3	29. 8	32. 8	33. 9	34. 9	36. 0	51 8. 41	0. 20	26. 26	1 50 42. 35	9. 50
	Lacaille 598	24	22. 6	23. 6	24. 7	25. 7	28. 6	49. 7	10. 9	13. 9	14. 9	15. 9	16. 9	54 49. 76	+ 0. 20	26. 26	1 54 23. 70	9. 56
	B. A. C. 643	25	. .	. .	47. 1	48. 1	49. 2	50. 2	10. 2	13. 3	14. 4	15. 5	16. 1	59 2. 68	— 14. 36	26. 27	1 58 22. 05	9. 30
	Lacaille 639	26	45. 3	46. 3	47. 3	48. 3	51. 1	12. 0	33. 0	36. 0	37. 0	38. 0	38. 8	3 12. 10	+ 0. 19	26. 27	2 2 46. 02	9. 61
	*ξ*¹ Ceti	27	31. 5	34. 3	35. 3	36. 2	37. 0	. .	54. 4	55. 4	58. 1	59. 0	59. 8	6 46. 10	— 33. 79	26. 27	2 5 46. 04	11. 05
	Lacaille 678	28	45. 2	46. 2	47. 4	48. 4	51. 3	12. 1	33. 0	36. 2	37. 2	38. 1	39. 1	9 12 20	+ 0. 20	26. 27	2 8 46. 13	9. 58
	ι Cassiopeæ	29	16. 5	18. 8	21. 2	23. 5	30. 3	18. 6	7. 3	14. 3	16. 8	18. 9	20. 8	18 18. 82	— 0. 03	26. 28	2 17 52. 51	17. 66
	Lacaille 802	†30	. .	. .	. .	. .	. .	. .	. .	58. 3	59. 2	0. 2	1. 1	31 59. 70	— 26. 47	26. 29	2 31 6. 94	9. 24
	γ Ceti	31	15. 5	16. 4	17. 3	18. 2	20. 8	40. 1	59. 3	2. 0	3. 0	3. 9	4. 7	36 40. 11	+ 0. 11	26. 29	2 36 13. 93	10. 96
11	*o* Virginis	32	19. 3	20. 2	21. 1	22. 0	24. 7	44. 1	3. 5	6. 4	7. 3	8. 1	9. 0	58 44. 14	0. 11	28. 89	11 58 15. 36	10. 80
	ε Corvi	33	8. 9	9. 9	11. 0	12. 0	14. 9	35. 4	56. 0	59. 0	0. 1	1. 0	1. 8	3 35. 45	0. 22	28. 89	12 3 6. 78	10. 97
Y.	*η* Virginis	34	59. 6	0. 5	1. 5	2. 4	5. 2	24. 2	43. 3	46. 1	46. 9	47. 9	48. 7	13 24. 21	0. 14	28. 90	12 12 55. 45	10. 77
	Weisse 261	35	50. 4	51. 3	52. 1	53. 1	56. 0	15. 5	35. 2	38. 0	38. 9	39. 8	40. 6	17 15. 54	0. 10	28. 91	12 16 46. 73	10. 65
	Weisse 345	36	26. 2	27. 0	28. 0	28. 9	31. 7	51. 3	10. 9	13. 8	14. 8	15. 6	16. 5	21 51. 34	0. 13	28. 91	12 21 22. 56	10. 71
	Saturn I	37	44. 1	45. 1	46. 0	48. 7	49. 6	31. 6	13. 4	14. 4	17. 1	18. 1	18. 9	24 31. 55	0. 20	28. 91	12 24 2. 84	. .
	Saturn II	38	8. 1	9. 2	10. 1	11. 0	13. 6	. .	52. 0	54. 6	55. 5	56. 4	57. 3	24 32. 78	0. 13	28. 91	12 24 4. 00	. .
	q Virginis	39	48. 1	49. 0	49. 9	50. 8	53. 6	12. 8	32. 3	35. 1	36. 0	36. 9	37. 8	27 12. 94	0. 17	28. 91	12 26 44. 20	10. 81
	χ Virginis	40	16. 3	17. 1	18. 0	18. 9	21. 6	40. 9	0. 2	3. 0	4. 0	4. 8	5. 7	32 40. 95	0. 16	28. 92	12 32 12. 19	10. 78
	Weisse 652	41	7. 9	8. 8	9. 6	10. 7	13. 4	33. 1	53. 0	55. 8	56. 7	57. 6	58. 4	39 33. 18	0. 09	28. 92	12 39 4. 35	10. 39
	29 Comæ	42	7. 0	7. 9	8. 9	9. 7	12. 5	32. 4	52. 3	55. 1	56. 0	57. 0	57. 8	42 32. 42	0. 09	28. 93	12 42 3. 58	10. 35
	Moon II	43	31. 5	32. 3	33. 3	34. 3	37. 2	57. 0	16. 9	19. 9	20. 8	21. 6	22. 5	48 57. 03	0. 17	28. 93	12 48 28. 27	. .
	θ Virginis	†44	57. 1	57. 9	58. 8	59. 7	2. 5	21. 6	40. 9	43. 6	44. 5	45. 4	46. 2	3 21. 65	0. 15	28. 94	13 2 52. 86	10. 60
	Polaris S. P.	45	13. 0	35. 0	59. 0	25. 0	35. 0	. .	40. 0	50. 0	14. 0	37. 0	4. 0	9 37. 20	2. 45	28. 94	1 9 10. 71	68. 34
	58 Virginis	46	21. 9	22. 8	23. 8	24. 7	27. 3	46. 7	6. 2	9. 0	9. 9	10. 8	11. 7	10 46. 80	0. 17	28. 95	13 10 18. 02	10. 72
	a Virginis	47	4. 0	4. 8	5. 8	6. 7	9. 4	28. 9	48. 3	51. 1	52. 0	53. 0	53. 8	18 28. 89	+ 0. 17	28. 95	13 18 0. 11	10. 71
	* + 77° 14′	48	. .	. .	. .	16. 1	20. 2	24. 1	28. 2	32. 3	. .	. .	. .	33 24. 18	— 0. 13	28. 97	13 32 55. 08	1. 42
	Jupiter I	49	1. 0	1. 9	2. 7	5. 5	6. 5	48. 7	31. 4	32. 2	35. 0	35. 8	36. 7	38 48. 85	+ 0. 25	28. 97	13 38 20. 13	. .
	Jupiter II	50	26. 5	27. 4	28. 5	29. 3	32. 0	. .	10. 8	13. 4	14. 5	15. 4	16. 2	38 51. 40	0. 16	28. 97	13 38 22. 59	. .
	η Bootis	51	13. 4	14. 4	15. 4	16. 4	19. 2	39. 4	59. 7	2. 7	3. 6	4. 5	5. 6	48 39. 48	0. 08	28. 98	13 48 10. 58	9. 45
N.	*a* Ophiuchi	52	38. 3	39. 2	40. 1	41. 0	43. 8	3. 3	23. 0	25. 8	26. 8	27. 7	28. 6	29 3. 42	0. 12	29. 21	17 28 34. 33	8. 18
	μ Herculis	53	6. 7	7. 7	8. 9	9. 8	12. 9	34. 4	56. 1	59. 2	0. 2	1. 3	2. 2	41 34. 49	+ 0. 10	29. 22	17 41 5. 37	— 6. 54
	δ Ursæ Minoris	†54	. .	. .	. .	. .	. .	. .	54. 7	. .	. .	. .	. .	21 54. 70	— 5 22. 33	29. 25	18 16 3. 12	+ 87. 03
	a Lyræ	55	15. 0	16. 0	17. 2	18. 2	21. 9	46. 2	10. 8	14. 3	15. 4	16. 5	17. 7	32 46. 29	+ 0. 09	—29. 26	18 32 17. 12	— 5. 19

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 9, 1. 8	— 26. 26	— 0. 036	+ 0. 120
11, 12. 8	— 28. 93	— 0. 048	+ 0. 135

January 7. Unfavorable night; stars blurred and unsteady.
2. Much blurred.
30. Two seconds less than result of observation January 12th.
44. Saw the companion faint star to northward.
54. Observation over D; star very faint, but probably within half a second.

		s.
January 9,	0h. to 3h. n. =	— 0. 140.
11,	11h. to 14h.	— 0. 190.

	r.	
January 11, 13h. 50m.	Image east 0. 40.	Clamp west.
	Image west 0. 20.	Clamp east.
	Image east 0. 38.	Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 12	Sun I	†1	18.0	19.0	19.7	22.5	42.4	43.4	44.3	3.8	6.9	8.0	9.0	34 43.36	+ 0.20	—29.31	19 34 14.25:	. .
	Sun II	†2	37.7	38.4	39.6	40.6	43.5	4.0	24.8	27.5	28.5	29.4	30.5	37 4.04	+ 0.20	29.31	19 36 34.93	. .
	Venus I	3	4.8	5.9	6.7	7.6	8.7	. .	27.2	30.2	31.3	32.3	33.2	10 18.79	— 11.86	29.34	20 9 37.59	+ 0.36
N.	α Cygni	4	. .	. .	. .	. .	. .	. .	41.1	45.0	46.1	47.5	48.7	37 45.68	31.48	29.37	20 36 44.83	— 5.22
	β Aquarii	†5	48.3	49.3	50.2	51.0	52.0	. .	9.3	12.1	13.0	13.9	14.7	25 1.38	11.08	29.41	21 24 20.89	— 9.53
	β Cephei	†6	15.3	23.3	26.0	28.6	31.1	. .	21.7	24.3	32.0	34.3	37.1	28 57.37	— 1 37.83	29.41	21 26 50.13	+ 0.21
	α Piscis Australis	7	5.6	6.5	7.5	8.6	11.6	33.8	56.0	59.3	0.2	1.2	2.2	50 33.86	+ 0.23	29.48	22 50 4.61	— 10.19
Y.	α Pegasi	8	0.6	1.6	2.5	3.4	6.2	26.0	45.8	48.6	49.5	50.5	51.3	58 26.00	0.12	29.38	22 57 56.74	9.32
	ω Piscium	9	22.0	22.9	23.7	24.7	27.4	46.5	5.9	8.6	9.6	10.4	11.3	52 46.64	0.13	29.42	23 52 17.35	9.91
	α Andromedæ	10	20.8	21.9	22.9	23.9	27.0	48.7	10.5	13.6	14.7	15.6	16.7	1 48.75	0.08	29.43	0 1 19.40	10.01
	γ Pegasi	11	15.8	16.7	17.6	18.6	21.3	41.1	0.9	3.7	4.7	5.6	6.4	6 41.13	0.11	29.44	0 6 11.80	10.01
	12 Ceti	12	8.2	9.2	10.1	11.0	13.7	32.8	52.2	55.0	55.9	56.7	57.6	23 32.94	0.15	29.45	0 23 3.64	9.99
	13 Ceti	13	17.3	18.2	19.2	20.1	22.7	41.9	1.1	3.8	4.8	5.6	6.5	28 41.98	0.15	29.45	0 28 12.63	10.02
	α Cassiopeæ	14	31.8	33.4	35.0	36.6	41.4	15.4	49.4	54.2	56.0	57.6	59.2	33 15.45	0.04	29.46	0 32 46.03	11.11
	β Ceti	15	46.8	47.8	48.8	49.7	52.5	12.7	32.9	35.9	36.8	37.7	38.6	37 12.75	0.19	29.46	0 36 43.48	9.83
	δ Piscium	16	40.2	41.0	42.0	42.8	45.5	4.9	24.2	26.9	27.8	28.7	29.6	42 4.87	0.12	29.47	0 41 35.52	10.27
	20 Ceti	17	6.1	7.0	8.0	8.8	11.4	30.6	49.8	52.6	53.5	54.4	55.1	46 30.66	0.15	29.47	0 46 1.34	10.13
	Weisse 871	18	45.1	45.9	46.9	47.7	50.5	9.5	28.8	31.5	32.4	33.3	34.2	51 9.62	0.14	29.47	0 50 40.29	10.25
	70 Piscium	19	. .	. .	. .	28.1	29.0	29.8	30.7	31.6	. .	. .	. .	55 29.84	0.14	29.48	0 55 0.50	10.40
	ε Piscium	20	55.8	56.7	57.6	58.5	1.2	20.5	39.7	42.6	43.5	44.3	45.2	56 20.51	0.12	29.48	0 55 51.15	10.39
	ϵ Piscium	21	24.7	25.5	26.4	27.4	30.1	49.2	8.3	11.2	12.2	13.0	13.9	1 49.26	0.13	29.48	1 1 19.91	10.39
N.	Polaris	22	. .	. .	. .	27.0	4.5	39.0	14.5	50.0	. .	. .	. .	9 39.00	0.73	29.59	1 9 10.14	67.93
	θ Ceti	23	16.3	17.2	18.1	19.1	21.7	41.1	0.6	3.2	4.1	5.0	5.8	17 41.11	0.16	29.60	1 17 11.67	10.08
	B. A. C. 452	24	. .	. .	. .	23.8	24.8	25.8	26.7	27.8	. .	. .	. .	24 25.78	+ 0.26	29.61	1 23 56.43	9.45
	η Piscium	25	. .	. .	. .	. .	. .	. .	23.4	24.4	27.1	27.9	28.9	25 26.34	— 46.08	29.61	1 24 10.65	10.88
	Lacaille 480	26	. .	. .	. .	25.4	26.5	27.4	28.5	29.6	. .	. .	. .	33 27.48	+ 0.27	29.61	1 32 58.14	9.34
	ν Piscium	27	24.4	25.3	26.3	27.1	29.8	48.9	8.2	10.9	11.8	12.7	13.6	34 49.00	0.13	29.61	1 34 19.52	10.62
	Lacaille 509	28	42.8	43.8	44.8	46.0	48.9	10.8	33.0	36.0	37.1	38.1	39.2	39 10.95	0.24	29.62	1 38 41.57	9.34
	Lacaille 527	29	18.9	20.8	21.9	24.8	45.4	46.3	47.3	7.9	11.0	11.9	13.9	42 46.37	+ 0.23	29.62	1 42 16.98	9.40
	γ¹ Arietis	†30	52.2	55.1	56.1	57.0	57.9	. .	16.1	17.1	19.8	20.8	21.7	47 7.37	— 35.30	29.62	1 46 2.45	11.28
	Lacaille 566	31	. .	. .	. .	5.6	6.7	7.7	8.7	9.7	. .	. .	. .	50 7.68	+ 0.27	29.63	1 49 38.32	9.29
	Lacaille 570	32	. .	. .	. .	9.7	10.8	11.7	12.8	13.7	. .	. .	. .	51 11.74	0.26	29.63	1 50 42.37	9.41
	α Arietis	33	31.8	32.8	33.8	34.7	37.7	58.4	19.2	22.2	23.2	24.1	25.1	59 58.45	0.09	29.63	1 59 28.91	11.69
	Lacaille 644	34	21.8	22.7	23.7	24.7	27.7	48.7	9.9	12.9	14.0	14.9	15.8	3 48.80	0.22	29.64	2 3 19.38	9.50
	67 Ceti	35	15.2	16.1	16.9	17.8	20.6	39.8	59.3	2.0	2.9	3.8	4.6	10 39.91	0.16	29.64	2 10 10.43	10.37
	B. A. C. 723	36	. .	. .	. .	18.9	19.9	20.8	21.8	22.8	. .	. .	. .	13 20.84	+ 0.26	29.65	2 12 51.45	9.40
	B. A. C. 743	37	8.8	11.9	12.9	14.0	15.0	. .	34.5	35.6	38.5	39.5	40.4	18 25.11	— 37.64	29.65	2 17 17.82	9.34
	Lacaille 744	38	. .	. .	. .	37.9	38.9	39.8	40.7	41.7	. .	. .	. .	22 39.80	+ 0.26	29.65	2 22 10.41	9.36
	Lacaille 802	39	10.1	11.1	12.2	13.2	16.3	38.3	0.4	3.5	4.6	5.5	6.5	31 38.34	+ 0.24	29.66	2 31 8.92	9.19
	B. A. C. 883	40	26.9	28.0	28.9	29.9	30.9	. .	50.7	54.0	55.0	56.0	56.9	44 41.72	— 12.49	29.66	2 43 59.57	9.23
	Lacaille 908	41	12.6	13.6	14.6	15.5	18.4	39.2	59.9	2.9	3.8	4.8	5.7	47 39.18	+ 0.21	29.67	2 47 9.72	— 9.60
	β Ursæ Minoris, S. P.	42	. .	. .	. .	42.6	39.0	36.1	32.6	29.0	. .	. .	. .	51 35.86	— 0.09	29.68	2 51 6.09	+ 3.37
	α Ceti	43	14.0	14.9	15.7	16.7	19.4	38.5	57.7	0.4	1.3	2.3	3.1	55 38.55	+ 0.13	29.68	2 55 9.00	— 11.11
	ζ Arietis	44	7.2	8.2	9.2	10.1	12.9	33.4	53.9	56.8	57.8	58.7	59.6	7 33.44	+ 0.09	29.69	3 7 3.84	— 12.32
	11 Ursæ Minoris, S. P.	45	. .	. .	. .	46.8	43.9	41.2	38.4	35.1	. .	. .	. .	17 41.08	— 0.08	29.70	15 17 11.30	+ 2.86
	γ² Ursæ Minoris, S. P.	46	46.3	43.3	40.2	37.5	28.6	25.8	22.6	13.7	10.6	7.9	4.8	21 25.57	0.00	29.70	15 20 55.87	+ 3.06
	ε Eridani	47	35.0	36.0	36.9	37.8	40.5	59.8	19.4	22.1	23.1	24.0	24.9	26 59.95	+ 0.17	29.71	3 26 30.41	— 10.24
	ζ Ursæ Minoris, S. P.	48	. .	. .	. .	34.7	30.0	26.2	21.2	17.5	. .	. .	. .	49 25.92	— 0.11	29.73	15 48 56.08	+ 12.22
	γ Eridani	49	44.4	45.4	46.3	47.3	8.8	9.7	10.6	32.2	33.2	34.2	35.0	52 9.74	+ 0.18	29.73	3 51 40.19	— 10.25
	Lacaille 1317	50	42.3	43.3	44.3	45.3	48.4	9.8	31.4	34.3	35.5	36.5	37.4	56 9.86	0.22	29.73	3 55 40.35	9.31
	Lacaille 1329	†51	. .	. .	. .	20.0	21.0	4.9	22.9	24.0	. .	. .	. .	58 21.96	0.25	29.73	3 57 52.48	9.37
	Lacaille 1379	52	3.9	4.9	5.9	6.8	9.8	30.7	51.7	54.7	55.8	56.8	57.7	7 30.79	+ 0.22	29.74	4 7 1.27	— 9.53
	δ Ursæ Minoris, S. P.	53	-	. .	. .	2.0	46.0	33.0	17.0	2.5	. .	. .	. .	16 32.10	— 0.31	29.85	18 16 1.94	+ 86.98
	Polaris, S. P.	54	. .	. .	. .	51.5	15.5	41.0	4.5	28.0	. .	. .	. .	9 40.10	+ 0.08	30.12	1 9 10.06	— 67.53
	α Virginis	55	41.6	42.6	43.6	46.3	47.4	. .	12.3	13.4	16.2	17.1	18.0	18 29.85	+ 0.25	—30.13	13 17 59.97	— 10.74

1. Very unsteady.
2. Unsteady.
5. *Observation unaccountably discordant, not used in clock error.*
6. C too early; D and E very good.
30. Magnitude of γ² Arietis 4.7.
51. Record doubtful.

January 11–12, 17h. to 0h. n. = — 0.115 s.
12, 0h. to 5h. — 0.145.

January 12, 13h. Image east 0.22 r. Clamp west.
Image west 0.37. Clamp east.
Image east 0.22. Clamp west.
Readings quite satisfactory.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 12, 23.9	— 29.53	— 0.050	+ 0.140
13.6	— 30.14	— 0.043	+ 0.140

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 12	η Virginis	1	26.6	27.7	28.6	31.5	32.3	. .	. .	. .	. .	. .	. .	27 29.34	+ 45.00	—30.13	13 27 44.21	— 10.31
	Moon II	†2	0.8	. .	4.6	5.6	6.5	. .	24.9	25.9	28.6	29.6	30.6	43 17.46	— 36.90	30.14	13 42 10.42	. .
N.	η Bootis	3	14.8	15.7	16.6	17.6	20.4	40.7	. .	3.6	4.7	5.7	6.5	48 38.63	+ 2.11	30.15	13 48 10.59	9.48
	τ Virginis	†4	24.0	25.0	25.9	28.5	29.6	. .	. .	. .	. .	. .	. .	54 26.60	+ 45.03	30.15	13 54 41.48	10.15
16	α Lyræ	†5	20.5	21.7	22.8	24.0	27.5	52.0	16.5	20.0	21.2	22.3	23.4	32 51.99	— 0.16	34.65	18 32 17.18	— 5.27
17	Sun I	6	53.4	54.3	55.1	56.1	59.0	19.6	40.1	43.1	44.0	45.0	45.9	56 19.60	0.01	34.70	19 55 44.89	. .
	Sun II	†7	13.1	14.0	14.9	15.9	18.9	39.3	59.6	2.6	3.6	4.5	5.7	58 39.28	0.01	34.70	19 58 4.57	. .
	Venus I	8	24.5	25.4	26.5	27.4	28.5	. .	46.9	50.1	50.9	51.8	52.8	36 38.48	11.96	34.72	20 35 51.80	+ 0.36
Y.	α Pegasi	9	29.6	30.6	31.5	32.4	33.3	. .	51.3	54.1	55.0	56.0	56.8	58 43.06	— 11.64	34.81	22 57 56.61	— 9.28
	β Ceti	10	52.3	53.2	54.1	55.1	58.1	18.2	38.5	41.5	42.4	43.3	44.1	37 18.25	+ 0.02	34.86	0 36 43.41	9.76
	δ Piscium	11	45.8	46.6	47.6	48.5	51.2	10.4	29.7	32.7	33.5	34.5	35.2	42 10.52	— 0.07	34.87	0 41 35.58	10.21
	20 Ceti	12	11.6	12.6	13.6	14.4	17.2	36.2	55.1	58.3	59.1	0.0	0.8	46 36.26	0.05	34.87	0 46 1.34	10.09
	ε Piscium	13	1.3	2.2	3.1	4.0	6.7	26.0	45.4	48.1	49.0	49.9	50.8	56 26.05	0.07	34.88	0 55 51.10	10.33
	29 Ceti	14	7.3	8.2	9.1	10.0	12.6	31.8	20.9	23.8	24.7	25.5	26.3	1 31.84	0.06	34.88	1 0 56.90	10.24
	Polaris	15	40.0	16.0	48.0	28.0	4.0	. .	49.0	41.0	16.0	55.0	29.0	17 26.60	7 44.34	34.89	1 9 7.37	64.14
	θ Ceti	16	21.6	22.6	23.5	24.4	27.2	46.5	5.9	8.8	9.7	10.5	11.4	17 46.55	0.02	34.89	1 17 11.64	10.01
	* +2° 49′	17	. .	. .	. .	3.6	4.5	5.3	6.2	7.0	. .	. .	. .	33 5.32	0.04	34.90	1 32 30.38	10.49
	Weisse 562	18	50.4	51.2	52.1	53.0	55.8	. .	34.0	36.9	37.7	38.5	39.5	33 14.91	0.07	34.90	1 32 39.94	10.48
	Weisse 628	19	17.0	17.9	18.8	19.6	22.6	41.6	0.9	3.6	4.5	5.3	6.2	35 41.64	0.07	34.90	1 35 6.67	10.54
	Weisse 755	20	10.2	11.1	11.9	12.8	15.6	34.7	53.8	56.7	57.6	58.5	59.3	43 34.75	0.05	34.91	1 42 59.79	10.46
	Weisse 860	21	42.2	43.0	43.8	44.7	47.5	6.7	25.8	28.7	29.6	30.5	31.4	49 6.72	0.06	34.91	1 48 31.75	10.60
	Weisse 943	22	23.3	26.3	27.1	28.0	28.8	. .	46.6	47.5	50.5	51.3	52.1	54 38.15	— 34.47	34.91	1 53 28.77	11.04
	Weisse 1043	23	28.0	28.9	29.8	30.7	33.6	. .	51.5	52.4	53.3	54.1	55.1	59 41.74	+ 11.45	34.92	1 59 18.27	11.15
	Weisse 1047	24	26.0	29.1	30.0	30.8	31.7	. .	49.6	50.4	53.3	54.2	55.0	0 41.01	34.69	34.92	1 59 31.40	11.16
	Weisse 1050	25	. .	. .	. .	5.0	6.0	6.8	7.7	8.7	. .	. .	. .	0 6.84	— 0.08	34.92	1 59 31.84	11.16
	19 Arietis	26	46.2	47.3	48.2	49.1	51.9	11.6	31.5	34.3	35.2	36.2	37.1	6 11.69	0.10	34.92	2 5 36.67	11.25
	Weisse 109	27	38.4	39.4	40.3	41.3	44.1	3.9	23.6	26.6	27.5	28.4	29.3	9 3.89	0.11	34.92	2 8 28.86	11.30
	Weisse 168	28	50.4	51.4	52.3	53.2	56.0	. .	34.4	37.2	38.1	38.9	39.8	12 15.17	0.04	34.92	2 11 40.21	10.36
	* —5° 35′	29	. .	. .	. .	14.5	15.5	16.4	17.3	18.2	. .	. .	. .	12 16.38	0.01	34.92	2 11 41.45	10.36
	Weisse 185	30	59.0	59.8	0.7	1.5	4.4	23.5	42.9	45.6	46.6	47.4	48.3	13 23.61	0.03	34.92	2 12 48.66	10.36
	Weisse 250	31	45.0	45.9	46.9	47.9	50.6	9.8	29.1	31.9	32.7	33.6	34.5	17 9.81	0.03	34.93	2 16 34.85	10.32
	Weisse 373	32	17.4	18.3	19.2	20.0	23.0	42.5	2.3	5.3	6.2	7.0	7.9	23 42.65	0.10	34.93	2 23 7.62	11.37
	Weisse 437	33	. .	. .	. .	38.7	39.5	40.4	41.3	42.2	. .	. .	. .	27 40.42	0.01	34.93	2 27 5.48	10.37
	B. Z. 333, 48	34	12.3	13.3	14.3	15.3	18.3	39.4	0.9	3.9	4.9	5.9	6.9	30 39.58	0.16	34.93	2 30 4.49	12.15
	B. Z. 333, 49	35	. .	. .	. .	13.8	14.8	15.8	16.7	17.7	. .	. .	. .	31 15.76	0.13	34.94	2 30 40.69	12.16
	Weisse 566	36	52.4	53.3	54.2	55.0	56.0	. .	13.4	16.2	17.0	17.9	18.8	34 5.42	11.28	34.94	2 33 19.20	10.42
	Weisse 640	37	42.6	43.5	44.3	45.2	48.0	7.1	26.3	29.0	30.0	30.9	31.8	38 7.15	0.03	34.94	2 37 32.18	10.50
	B. Z. 337, 8	38	10.3	11.2	12.1	13.1	15.8	35.7	55.6	58.4	59.3	0.2	1.1	43 35.71	0.11	34.94	2 43 0.66	11.65
	Lalande 5358	39	50.3	51.1	52.0	52.9	55.7	14.8	34.1	36.8	37.6	38.5	39.4	47 14.84	0.05	34.94	2 46 39.85	10.70
	Rumker 755	40	50.0	51.0	52.0	52.9	55.7	15.5	35.3	38.2	39.0	40.1	41.0	51 15.52	0.11	34.95	2 50 40.46	11.74
	B. Z. 337, 20	41	21.7	22.7	23.7	24.6	27.4	47.1	7.1	10.0	11.0	12.0	12.9	54 47.29	0.11	34.95	2 54 12.23	11.81
	δ Arietis	42	59.1	0.0	1.0	1.9	4.8	24.8	45.3	48.1	49.0	50.0	50.8	4 24.98	0.13	34.95	3 3 49.90	12.15
	ζ Arietis	43	12.7	13.6	14.6	15.6	18.6	38.9	59.3	2.3	3.2	4.0	5.1	7 38.90	0.13	34.96	3 7 3.81	12.25
19	ε Pegasi	44	38.9	39.7	40.7	41.5	44.3	3.7	23.2	25.9	26.8	27.7	28.7	38 3.74	0.08	36.13	21 37 27.53	8.84
	Polaris	45	. .	. .	. .	. .	. .	. .	. .	47.0	33.5	9.5	44.0	40 33.50	30 53.86	36.30	1 9 3.34	62.36
N.	α Arietis	46	. .	. .	. .	3.3	4.2	5.2	6.2	7.1	. .	. .	. .	0 5.20	— 0.09	36.31	1 59 28.80	11.59
	Lacaille 644	47	28.6	29.6	30.6	31.6	34.5	55.5	16.8	. .	20.8	21.8	22.7	3 53.25	+ 2.42	36.31	2 3 19.36	9.39
	ξ¹ Ceti	48	57.5	58.4	59.3	0.3	2.9	22.3	41.6	44.4	45.3	46.2	47.1	6 22.30	— 0.07	36.31	2 5 45.92	10.93
	67 Ceti	49	22.0	23.0	23.8	24.7	27.5	46.7	6.0	8.8	9.7	10.6	11.5	10 46.72	— 0.03	36.32	2 10 10.37	10.29
	B. A. C. 723	50	0.3	1.3	2.2	3.4	6.3	27.7	49.2	52.0	53.2	54.2	55.1	13 27.72	+ 0.01	36.32	2 12 51.41	9.29
	Lacaille 756	51	29.6	30.6	31.6	32.6	35.6	56.6	17.7	20.7	21.7	22.7	23.7	23 56.65	0.01	36.33	2 23 20.33	— 9.39
	5 Ursæ Minoris, S. P.	52	. .	. .	. .	33.1	29.4	25.7	21.9	18.0	. .	. .	. .	28 25.62	+ 0.70	36.33	14 27 49.99	+ 2.34
	γ Ceti	53	25.7	26.6	27.5	28.4	31.0	50.2	9.4	12.1	12.9	13.9	14.8	36 50.23	— 0.06	36.33	2 36 13.84	— 10.85
	Lacaille 865	54	. .	. .	. .	40.0	41.0	42.0	42.9	43.9	. .	. .	. .	40 41.96	+ 0.04	—36.34	2 40 5.66	— 9.30

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 17, 23.9	34.84	— 0.036	— 0.051
19, 3.0	36.35	— 0.040	. .

2. D_2 missing.

4. From Polaris S. P. to τ Virginis the observations were made by glimpses betweeen cumulus clouds; give them only half weight.

5. Good observation.

7. Boiling; wind blew off the screen.

			s.
January	12, 6h. to 14h. n.	=	—0.165.
	16–17, 18h. to 21h.		0.110.
	17, 23h. to 4h.		0.210.
	19, 21h. to 6h.		—0.140.

January 13, After adjusting collimation at 3h.

	r.	
Image west	0.09.	Clamp east.
Image east	0.03.	Clamp west.

January 17, 3h. 20m. Image 0.00. Clamp west.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed. R. Ascension.	Reduct'n to 1860. 0.
363.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
n. 19	O. Arg. S. 1834 .	1	1.7	2.7	3.7	4.7	27.8	28.7	29.7	52.9	54.1	55.0	55.9	43 28.90	+ 0.01	—36.34	2 42 52.57	— 9.34
	Lacaille 910 . .	2	36.3	37.3	38.4	39.3	42.2	2.9	23.7	26.8	27.7	28.7	29.6	48 2.99	0.00	36.34	2 47 26.65	9.49
	Lacaille 922 . .	3	27.1	30.0	31.1	32.1	33.0	. .	52.4	53.4	56.3	57.2	58.3	50 43.09	— 37.28	36.34	2 49 29.47	9.30
N.	Lacaille 932 . .	†4	. .	. .	. .	48.6	49.6	50.5	51.6	52.5	. .	. .	. .	51 50.56	+ 0.04	36.34	2 51 14.26	9.32
	B. A. C. 940 . .	5	. .	. .	. .	10.0	11.1	12.0	13.0	14.0	. .	. .	. .	54 12.02	0.04	36.35	2 53 35.71	9.30
	τ^3 Eridani	6	32.1	33.0	34.0	35.1	38.0	58.9	19.8	23.0	24.0	24.9	25.9	56 58.97	+ 0.01	36.35	2 56 22.63	9.41
	α Persei	7	34.8	36.3	37.7	43.1	11.2	12.4	14.0	42.0	47.7	49.1	50.3	15 12.60	— 0.24	36.36	3 14 36.00	15.34
	ε Eridani	8	41.8	42.8	43.7	44.6	47.3	6.7	26.2	28.9	29.8	30.7	31.6	27 6.74	— 0.03	36.37	3 26 30.34	10.17
	Lacaille 1160 . .	9	. .	. .	. .	15.4	16.5	17.6	18.6	19.6	. .	. .	. .	33 17.54	+ 0.06	36.37	3 32 41.23	8.82
	η Tauri	10	32.5	33.5	34.4	35.5	38.3	59.3	20.2	23.2	24.2	25.3	26.2	39 59.33	— 0.12	36.38	3 39 22.83	12.80
	Lacaille 1239 . .	11	26.4	27.6	31.5	50.9	51.9	52.9	53.9	54.9	14.3	18.4	19.5	43 52.93	+ 0.02	36.38	3 43 16.57	9.25
	γ Eridani	12	51.3	52.2	53.1	54.0	56.8	16.4	36.2	39.0	40.0	40.9	41.8	52 16.52	— 0.02	36.38	3 51 40.12	10.17
	B. A. C. 1250 . .	13	22.1	23.3	24.3	25.4	28.4	50.8	13.0	16.3	17.4	18.4	19.3	55 50.79	+ 0.02	36.39	3 55 14.42	8.89
	Lacaille 1341 .	14	34.6	35.7	.	37.7	40.7	. .	25.3	28.5	. .	30.6	31.5	0 3.07	0.02	36.39	3 59 26.70	8.91
	O. Arg. S. 2793 .	15	. .	. .	. .	8.4	9.5	10.4	11.4	12.4	. .	. .	. .	0 10.42	0.05	36.39	3 59 34.08	8.92
	Lacaille 1379 . .	16	10.7	11.7	12.7	13.7	16.5	37.6	58.5	1.6	2.5	3.4	4.4	7 37.57	0.01	36.40	4 7 1.18	9.45
	B. A C. 1340 . .	17	10.0	11.0	11.9	12.9	15.8	37.0	58.2	1.3	2.3	3.2	4.2	14 37.07	0.01	36.40	4 14 0.68	9.37
	Lacaille 1451 . .	18	22.7	23.8	24.8	25.8	28.5	49.5	10.6	13.7	14.7	15.7	16.6	21 49.67	0.01	36.40	4 21 13.28	9.46
	Lacaille 1483 . .	19	56.5	57.4	58.5	59.4	2.2	23.2	44.0	47.0	48.0	48.9	49.9	25 23.17	0.01	36.41	4 24 46.77	— 9.55
	A Draconis, S. P. .	20	. .	. .	. .	54.3	51.6	49.4	46.7	44.3	. .	. .	. .	28 49.26	0.45	36.41	16 28 13.30	+ 3.08
	Lacaille 1541 . .	21	37.0	37.9	39.0	40.2	43.1	5.0	26.6	29.6	30.6	31.6	32.6	34 4.84	+ 0.02	36.41	4 33 28.45	— 9.16
	μ Eridani	22	16.0	16.8	17.8	18.6	19.5	. .	37.0	39.6	40.7	41.6	42.4	39 29.00	— 11.26	36.42	4 38 41.32	11.12
	ι Aurigæ	23	14.6	15.6	16.5	17.8	21.1	43.6	6.5	10.0	11.0	12.1	13.2	48 43.82	— 0.15	36.42	4 48 7.25	14.43
	* —28° 47′ . . .	†24	46.1	47.2	48.2	49.2	52.3	14.2	36.0	39.1	40.2	41.2	42.2	55 14.17	+ 0.02	36.43	4 54 37.76	— 9.14
	ε Ursæ Minoris, S. P.	25	. .	. .	. .	45.8	39.2	33.6	26.2	19.6	. .	. .	.	0 32.88	+ 1.26	36.43	16 59 57.71	+ 29.50
	Uranus I . . .	26	16.2	17.2	18.2	19.2	22.1	42.8	3.6	6.5	7.5	8.5	9.5	4 42.85	— 0.12	36.43	5 4 6.30	. .
	Uranus II . . .	27	51.7	52.7	53.6	56.5	57.7	. .	28.6	29.7	32.4	33.3	34.3	4 43.05	0.04	36.43	5 4 6.58	. .
	β Orionis	28	11.1	12.0	12.9	13.9	16.5	35.8	55.2	58.1	59.0	59.9	0.8	8 35.93	0.03	36.44	5 7 59.46	— 10.83
23	Moon I	29	20.5	21.5	22.4	23.4	26.0	45.6	5.3	8.0	9.0	9.8	10.8	50 45.66	0.05	41.00	23 50 4.61	. .
	ω Piscium	30	33.5	34.5	35.4	36.3	38.9	58.2	17.4	20.2	21.1	22.0	22.9	52 58.22	0.05	41.00	23 52 17.17	9.80
	α Andromedæ . .	31	32.5	33.4	34.5	35.5	38.7	0.3	22.0	25.1	26.2	27.3	28.2	2 0.34	0.09	41.00	0 1 19.25	9.86
Y.	γ Pegasi	32	27.4	28.3	29.2	30.1	33.0	52.7	12.6	15.4	16.3	17.2	18.2	6 52.76	0.07	41.01	0 6 11.68	9.89
	β Ceti	33	58.4	59.4	0.4	1.4	4.2	24.3	44.7	47.5	48.5	49.4	50.4	37 24.42	0.01	41.03	0 36 43.38	9.69
	Polaris . . . {	†34	10.0	46.5	25.0	3.0	51.0	. .	43.0	35.0	11.0	47.0	22.0	} 9 47.10	4.75	41.06	1 9 1.29	58.60
		†35	. .	. .	. .	35.0	12.0	45.0	23.0	58.5	. .	. .	. .					
	ν Piscium	36	35.8	36.8	37.7	38.6	41.3	0.4	19.6	22.4	23.4	24.3	25.1	35 0.49	0.05	41.08	1 34 19.36	10.48
	48 Cassiopeæ . . .	37	16.8	19.6	22.2	24.9	32.7	29.3	26.1	34.1	36.8	39.6	42.2	51 29.48	0.37	41.09	1 50 48.02	16.61
	B. A. C. 641 . .	38	55.3	56.3	57.2	58.2	0.9	20.0	39.4	42.2	43.1	44.0	44.9	58 20.14	0.05	41.10	1 57 38.99	10.75
	* +52° 24′ . . .	39	. .	. .	. .	53.3	54.7	56.1	57.6	59.0	. .	. .	. .	2 56.14	0.14	41.10	2 2 14.90	13.70
	Lalande 4015 . .	40	27.1	28.5	30.0	31.4	36.0	7.2	38.7	43.1	44.6	46.0	47.5	5 7.28	0.18	41.10	2 4 26.00	13.77
	Weisse 109 . . .	41	. .	. .	. .	. .	. .	. .	29.8	32.6	33.6	34.6	35.4	9 33.20	23.28	41.11	2 8 28.81	11.22
	B. A. C. 722 . .	42	5.6	6.6	7.5	8.3	11.0	30.3	49.5	52.2	53.2	54.0	54.9	13 30.28	0.03	41.11	2 12 49.14	10.31
	Weisse 250 . . .	43	51.2	52.1	53.0	53.9	56.7	16.0	35.3	38.0	38.9	39.7	40.6	17 15.95	0.03	41.11	2 16 34.81	10.24
	ξ^2 Ceti	44	10.5	11.5	12.3	13.4	16.0	35.3	54.6	57.4	58.3	59.2	0.0	21 35.32	0.05	41.12	2 20 54.15	10.93
	Weisse 437 . . .	45	22.0	22.8	23.7	24.6	27.3	46.6	6.0	8.6	9.5	10.4	11.3	27 46.62	0.03	41.12	2 27 5.47	10.30
	30 Arietis	46	. .	. .	. .	7.7	10.8	11.8	12.8	13.7	. .	. .	. .	30 11.36	24.61	41.12	2 29 5.63	11.95
	B. A. C. 797 . .	47	. .	. .	. .	. .	. .	. .	35.6	36.6	39.4	40.3	41.3	30 38.62	49.04	41.12	2 29 8.46	11.95
	Weisse 576 . . .	48	2.0	3.0	3.9	4.8	7.6	26.7	46.0	48.9	49.7	50.5	51.4	34 26.77	0.03	41.13	2 33 45.61	10.37
	Weisse 640 . . .	49	48.5	49.6	50.4	51.3	54.0	13.3	32.5	35.3	36.2	37.0	38.0	38 13.28	0.03	41.13	2 37 32.12	10.42
	B. Z. 530, 60 . .	50	31.4	32.4	33.4	34.5	37.5	58.4	19.6	22.6	23.6	24.6	25.5	42 58.50	0.09	41.13	2 42 17.28	12.17
	B. Z. 333, 72 . .	51	19.1	20.1	21.1	22.0	25.0	46.2	7.5	10.6	11.6	12.7	13.5	48 46.31	0.09	41.14	2 48 5.08	12.30
	Rumker 755 . .	52	56.1	57.0	58.0	58.8	1.7	21.5	41.5	44.4	45.2	46.2	47.1	51 21.59	0.07	41.14	2 50 40.38	11.67
	B. Z 337, 20 . .	53	27.9	28.8	29.7	30.6	33.5	53.4	13.4	16.2	17.2	18.0	19.0	54 53.43	0.07	41.14	2 54 12.22	11.74
	β Persei	54	27.2	28.4	29.5	30.6	34.3	59.2	24.5	28.1	29.3	30.5	31.6	59 59.38	0.13	41.15	2 59 18.10	13.77
	Weisse 26 . .	55	42.8	43.8	44.7	45.7	48.4	7.8	27.3	30.0	31.0	31.8	32.7	4 7.82	— 0.06	—41.15	3 3 26.61	— 11.41

4. Following of double.
24. Observed for Lacaille 1673.
34–35. Steady.

r.
January 19, 5h. 20m. Image east 0.08. Clamp west.
Image west 0.03. Clamp east.
Image east 0.10. Clamp west.

23, 3h. 50m. Image east 0.10. Clamp west.

s.
January 23, 23h. to 4h. n. = — 0.090.
January 23. Night cloudy; stars steady; illuminated the field with gas.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 19, 3.0	— 36.35	— 0.040	— 0.051
23, 1.4	— 41.07	— 0.049	— 0.040

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Jan. 23	Weisse 95	1	23. 3	26. 2	27. 2	28. 0	28. 9	46. 2	. .	47. 1	49. 9	50. 7	51. 5	7 37. 90	— 33. 64	—41. 16	3 6 23. 10	— 11. 04
	B. Z. 506, 55	2	52. 6	53. 6	54. 5	55. 4	58. 3	18. 4	38. 6	41. 4	42. 2	43. 2	44. 0	11 18. 38	0. 07	41. 16	3 10 37. 15	12. 01
	Weisse 233	3	10. 0	10. 9	11. 8	12. 9	15. 6	35. 0	54. 5	57. 3	58. 2	59. 1	0. 0	14 35. 03	0. 06	41. 16	3 13 53. 81	11. 53
Y.	B. Z. 448, 25	4	47. 4	48. 6	49. 8	50. 9	54. 4	18. 4	42. 5	46. 1	47. 2	48. 3	49. 4	19 18. 45	0. 12	41. 16	3 18 37. 17	13. 86
	Groombridge 698	5	7. 0	8. 2	9. 3	10. 6	14. 3	40. 2	6. 0	9. 8	10. 9	12. 1	13. 2	23 40. 15	0. 14	41. 17	3 22 58. 84	14. 42
	η Tauri	6	37. 3	38. 3	39. 2	40. 2	43. 2	4. 0	25. 0	28. 0	29. 0	29. 9	30. 9	40 4. 09	0. 08	41. 18	3 39 22. 83	12. 76
24	Sun I	†7	38. 3	39. 2	40. 1	41. 0	43. 8	4. 2	24. 9	27. 5	28. 5	29. 5	30. 4	26 4. 31	0. 01	42. 01	20 25 22. 29	. .
	Sun II	†8	56. 3	57. 5	58. 3	59. 3	2. 1	22. 3	42. 7	45. 8	46. 8	47. 7	48. 6	28 22. 49	0. 01	42. 01	20 27 40. 47	. .
	Polaris	†9	. .	. .	. .	36. 0	11. 5	45. 5	24. 0	58. 5	. .	. .	. .	9 47. 10	4. 70	42. 25	1 9 0. 15	57. 76
25	η Piscium	10	28. 6	29. 5	30. 4	31. 4	34. 1	53. 8	13. 6	16. 5	17. 4	18. 4	19. 3	24 53. 91	0. 07	43. 32	1 24 10. 52	10. 71
	Moon I	11	32. 4	33. 3	34. 3	35. 2	38. 1	58. 1	18. 4	21. 3	22. 2	23. 1	24. 0	32 58. 22	0. 06	43. 33	1 32 14. 83	. .
	107 Piscium	12	. .	46. 6	47. 5	48. 5	49. 4	50. 4	8. 8	. .	12. 7	13. 6	14. 5	35 58. 11	9. 69	43. 33	1 35 5. 09	11. 01
	β Arietis	13	23. 2	24. 2	25. 1	26. 0	28. 9	49. 3	9. 7	12. 6	13. 7	14. 6	15. 5	47 49. 35	0. 08	43. 34	1 47 5. 93	11. 20
	ι Arietis	14	35. 1	36. 0	36. 9	37. 8	38. 8	. .	57. 0	59. 8	0. 8	1. 7	2. 6	50 48. 65	11. 77	43. 35	1 49 53. 53	11. 08
	α Arietis	15	45. 5	46. 5	47. 5	48. 4	51. 4	12. 1	32. 9	36. 0	36. 9	37. 8	38. 8	0 12. 16	0. 09	43. 36	1 59 28. 71	11. 50
	* + 8° 14′	16	58. 7	59. 5	0. 4	1. 3	4. 1	. .	42. 7	45. 5	46. 4	47. 3	48. 2	5 23. 41	0. 06	43. 36	2 4 39. 99	10. 84
	Weisse 44	17	. .	. .	. .	27. 3	28. 2	29. 0	30. 0	30. 8	. .	. .	. .	5 29. 06	0. 03	43. 36	2 4 45. 67	10. 84
	ξ¹ Ceti	18	4. 4	5. 4	6. 3	7. 2	9. 9	29. 2	48. 6	51. 4	52. 3	53. 2	54. 1	6 29. 27	0. 05	43. 36	2 5 45. 86	10. 84
26	Sun I	†19	1. 5	2. 4	3. 3	4. 3	7. 0	27. 3	47. 6	50. 4	51. 4	52. 4	53. 3	34 27. 35	0. 01	44. 32	20 33 43. 02	. .
	Sun II	†20	19. 0	20. 0	20. 9	21. 9	24. 8	44. 9	5. 2	8. 2	9. 2	10. 1	11. 1	36 45. 03	0. 01	44. 32	20 36 0. 70	. .
28	α Aquilæ	21	30. 3	31. 3	32. 2	33. 1	35. 9	55. 1	14. 5	17. 3	18. 2	19. 1	20. 0	44 55. 18	0. 05	49. 21	19 44 5. 92	— 8. 76
29	Venus I	†22	6. 4	7. 3	8. 2	9. 2	12. 0	31. 9	51. 9	54. 7	55. 7	56. 6	57. 6	37 31. 95	0. 01	49. 32	21 36 42. 62	+ 0. 36
	Mercury I	†23	22. 1	23. 0	23. 8	24. 8	27. 7	47. 2	6. 7	9. 5	10. 4	11. 3	12. 2	55 47. 15	0. 02	49. 34	21 54 57. 79	+ 0. 26
	α Pegasi	24	20. 7	21. 6	22. 5	23. 5	26. 2	46. 0	5. 8	8. 7	9. 6	10. 5	11. 4	58 46. 05	0. 06	49. 41	22 57 56. 58	— 9. 20
	δ Persei	25	27. 1	28. 5	29. 7	31. 1	35. 1	3. 3	31. 7	35. 6	37. 0	38. 2	39. 6	34 3. 35	0. 16	49. 69	3 33 13. 50	15. 21
	17 Tauri	26	9. 6	10. 5	11. 5	12. 5	15. 5	36. 3	57. 2	0. 3	1. 2	2. 2	3. 2	37 36. 36	0. 08	49. 69	3 36 46. 59	12. 66
	1 Pleiadum	27	. .	. .	. .	8. 2	9. 2	10. 1	11. 1	12. 0	. .	. .	. .	38 10. 12	0. 06	49. 69	3 37 20. 37	12. 66
	7 Pleiadum	28	. .	. .	. .	33. 5	34. 6	35. 4	36. 4	37. 3	. .	. .	. .	38 35. 44	0. 06	49. 69	3 37 45. 69	12. 66
	Weisse (2) 845	29	. .	. .	. .	55. 2	56. 1	57. 0	57. 9	58. 9	. .	. .	. .	38 57. 02	0. 06	49. 69	3 38 7. 27	12. 68
	9 Pleiadum	30	. .	. .	. .	. .	. .	. .	20. 2	23. 3	24. 2	25. 2	26. 2	39 23. 82	24. 55	49. 69	3 38 9. 58	12. 68
	24 Tauri	31	. .	. .	. .	2. 4	3. 4	4. 3	5. 3	6. 3	. .	. .	. .	40 4. 34	0. 06	49. 69	3 39 14. 59	12. 68
	η Tauri	32	45. 8	46. 6	47. 5	48. 6	51. 5	12. 4	33. 4	36. 3	37. 4	38. 3	39. 2	40 12. 45	0. 08	49. 69	3 39 22. 68	12. 68
	27 Tauri	33	26. 3	27. 2	28. 1	29. 0	32. 0	54. 1	13. 8	16. 8	17. 8	18. 8	19. 7	41 52. 96	0. 08	49. 69	3 41 3. 19	12. 70
	28 Tauri	34	. .	. .	. .	52. 2	53. 2	54. 1	55. 0	56. 1	. .	. .	. .	41 54. 12	0. 06	49. 69	3 41 4. 37	12. 70
	B. A. C. 1195	35	8. 9	9. 8	10. 8	11. 8	14. 9	35. 5	56. 5	9. 5	0. 5	1. 4	2. 4	43 35. 64	0. 08	49. 70	3 42 45. 86	12. 71
	Lalande 7184	36	. .	. .	. .	27. 5	28. 6	29. 6	30. 6	31. 5	. .	. .	. .	47 29. 56	0. 06	49. 70	3 46 39. 80	12. 68
	Lalande 7220	37	. .	. .	. .	44. 5	45. 4	46. 3	47. 4	48. 3	. .	. .	. .	48 46. 38	0. 06	49. 70	3 47 56. 62	12. 69
	Lalande 7238–'39	38	. .	. .	. .	11. 0	11. 9	12. 8	13. 7	14. 7	. .	. .	. .	49 12. 82	0. 06	49. 70	3 48 23. 06	12. 70
	33 Tauri	39	22. 0	22. 8	23. 8	24. 8	27. 7	48. 3	9. 2	12. 2	13. 2	14. 1	15. 1	49 48. 47	0. 08	49. 70	3 48 58. 69	12. 71
	λ Tauri	40	32. 1	33. 0	34. 0	34. 8	37. 5	57. 2	16. 8	19. 5	20. 5	21. 4	22. 4	53 57. 20	0. 06	49. 71	3 53 7. 43	11. 90
	c Persei	41	0. 0	1. 2	2. 5	3. 9	8. 0	36. 1	4. 4	8. 5	9. 7	11. 2	12. 4	59 36. 17	0. 16	49. 71	3 58 46. 30	15. 70
	Rumker 1104	42	17. 2	18. 2	19. 3	20. 3	23. 4	45. 0	6. 8	10. 0	11. 0	11. 9	13. 0	4 45. 10	0. 09	49. 72	4 3 55. 29	13. 35
	B. Z. 521, 8	43	36. 0	37. 0	38. 0	39. 0	41. 9	2. 8	23. 7	26. 8	27. 8	28. 7	29. 7	8 2. 85	— 0. 08	49. 72	4 7 13. 05	12. 97
	* + 21. 12	44	41. 5	42. 5	43. 5	44. 4	47. 2	. .	6. 0	7. 0	7. 9	8. 9	9. 8	15 55. 87	+ 11. 96	49. 73	4 15 18. 10	12. 82
	ε Tauri	45	3. 2	4. 1	5. 1	6. 0	8. 9	29. 2	49. 4	52. 2	53. 2	54. 2	55. 1	21 29. 15	— 0. 09	49. 74	4 20 39. 32	12. 68
	α Tauri	46	30. 1	31. 1	32. 1	33. 0	35. 8	55. 7	15. 6	18. 6	19. 5	20. 5	21. 3	28 55. 75	0. 07	49. 74	4 28 5. 94	12. 48
	Rumker 1250	47	. .	. .	. .	49. 2	50. 2	51. 2	52. 1	53. 1	. .	. .	. .	34 51. 16	0. 06	49. 75	4 34 1. 35	13. 11
	τ Tauri	48	27. 1	28. 0	29. 0	30. 0	32. 8	. .	14. 3	17. 4	18. 3	19. 3	20. 3	34 53. 65	0. 09	49. 75	4 34 3. 81	13. 11
	Lalande 8870	49	6. 2	7. 2	8. 1	9. 1	12. 1	32. 7	53. 5	56. 5	57. 5	58. 5	59. 4	36 32. 80	0. 08	49. 75	4 35 42. 97	13. 13
	B. Z. 521, 49	50	16. 7	17. 7	18. 7	19. 6	22. 6	43. 6	4. 7	7. 8	8. 7	9. 8	10. 7	41 43. 69	0. 08	49. 76	4 40 53. 85	13. 35
	O. Arg. N. 5260	51	43. 7	45. 0	46. 5	48. 0	52. 3	22. 9	53. 7	58. 0	59. 4	0. 8	2. 2	45 22. 95	0. 18	49. 76	4 44 33. 01	— 17. 25
	Moon I	†52	55. 9	56. 9	58. 0	58. 9	2. 0	23. 0	44. 3	47. 4	48. 5	49. 5	50. 4	1 23. 16	— 0. 08	—49. 77	5 0 33. 31	. .

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 25, 1. 7	— 43. 34	— 0. 053	— 0. 040

7–8. Clock error somewhat uncertain.
9. Steady.
19–20. Clock error doubtful.
22. Good observation.
23. Steady.
52. Fine observation.

January 24–26. n. = — 0. 100 s.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
363.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
n. 29	Uranus	1	26. 2	27. 2	28. 1	29. 1	32. 0	52. 8	13. 6	16. 5	17. 5	18. 6	19. 5	3 52. 83	— 0. 08	—49. 78	5 3 2. 97	. .
	β Tauri	2	2. 6	3. 6	4. 7	5. 7	8. 8	30. 4	52. 4	55. 4	56. 4	57. 5	58. 5	18 30. 55	0. 09	49. 79	5 17 40. 67	— 14. 03
Y.	δ Orionis	3	28. 0	29. 0	29. 9	30. 8	33. 4	52. 4	11. 6	14. 6	15. 4	16. 2	17. 1	25 52. 58	0. 03	49. 80	5 25 2. 75	11. 43
	ζ Tauri	4	53. 7	54. 7	55. 6	56. 5	59. 4	19. 9	40. 6	43. 4	44. 3	45. 3	46. 2	30 19. 96	0. 08	49. 80	5 29 30. 08	13. 32
30	Polaris	†5	. .	. .	. .	48. 5	39. 0	17. 0	52. 0	28. 0	. .	. .	. .	25 0. 90	15 13. 93	. .	. . .	53. 29
	η Tauri	6	. .	. .	. .	23. 9	52. 8	13. 6	34. 7	3. 3	. .	. .	. .	40 13. 66	0. 03	50. 81	3 39 22. 82	12. 66
N.	ε Tauri	7	. .	. .	. .	42. 1	10. 0	30. 3	50. 7	18. 3	. .	. .	. .	21 30. 28	0. 02	50. 85	4 20 39. 41	12. 67
	Uranus	8	. .	. .	. .	. .	.	48. 5	9. 4	37. 9	. .	. .	. .	4 11. 93	23. 49	50. 88	5 2 57. 58	. .
	β Tauri	9	. .	. .	. .	. .	9. 8	31. 5	53. 4	23. 2	. .	. .	. .	18 44. 47	12. 99	50. 90	5 17 40. 58	14. 02
	ξ Tauri	†10	. .	. .	. .	35. 0	0. 7	20. 9	41. 6	6. 8	. .	. .	. .	30 21. 00	0. 03	50. 91	5 29 30. 06	13. 31
	α Orionis	†11	. .	. .	. .	52. 8	19. 5	38. 6	58. 0	24. 5	. .	. .	. .	48 38. 68	0. 00	50. 92	5 47 47. 76	— 12. 17
	Moon I	†12	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	5. 3	55 5. 30	50. 17	50. 93	5 53 24. 20	. .
	δ Ursæ Minoris	†13	. .	. .	. .	22. 5	8. 5	. .	. .	52. 5	. .	. .	. .	23 7. 83	6 9. 61	51. 55	18 16 6. 67	+ 84. 58
31	Sun I	14	46. 2	47. 1	48. 0	48. 9	51. 6	11. 7	31. 9	34. 9	35. 7	36. 6	37. 5	54 11. 83	0. 00	51. 86	20 53 19. 97	. .
	Sun II	15	2. 7	3. 7	4. 5	5. 4	8. 3	28. 3	48. 4	51. 4	52. 3	53. 2	54. 3	56 28. 41	0. 00	51. 86	20 55 36. 55	. .
	α Pegasi	16	23. 2	24. 2	25. 2	26. 0	28. 8	48. 5	8. 3	11. 2	12. 2	13. 0	13. 9	58 48. 59	0. 07	51. 93	22 57 56. 59	— 9. 19
Y.	α Andromedæ	17	43. 4	44. 4	45. 5	46. 4	49. 5	11. 2	33. 0	36. 1	37. 2	38. 1	39. 2	2 11. 27	0. 09	51. 97	0 1 19. 21	9. 77
	α Arietis	18	54. 2	55. 2	56. 2	57. 2	0. 1	20. 9	41. 5	44. 6	45. 6	46. 5	47. 5	0 20. 86	0. 10	52. 04	1 59 28. 72	11. 41
	γ Geminorum	19	17. 3	18. 2	19. 2	20. 0	22. 9	42. 8	2. 7	5. 6	6. 6	7. 5	8. 5	30 42. 85	0. 10	52. 19	6 29 50. 56	13. 10
	51 Cephei	20	. .	. .	. .	7. 0	25. 0	42. 0	1. 5	20. 5	. .	. .	. .	36 43. 20	4. 72	52. 20	6 35 46. 28	127. 81
	Moon I	21	7. 2	8. 1	9. 0	10. 0	13. 0	33. 7	54. 8	57. 8	58. 7	59. 7	0. 5	46 33. 86	— 0. 11	52. 20	6 45 41. 55	. .
	ε Canis Majoris	22	41. 1	42. 2	43. 2	44. 2	47. 3	9. 0	31. 0	34. 2	35. 1	36. 1	37. 0	54 9. 13	+ 0. 07	52. 21	6 53 16. 99	9. 48
	ζ Geminorum	23	27. 8	28. 7	29. 8	30. 7	33. 6	54. 0	14. 5	17. 5	18. 4	19. 3	20. 3	56 54. 05	— 0. 12	52. 21	6 56 1. 72	13. 52
	γ Canis Majoris	24	26. 4	27. 4	28. 3	29. 2	30. 1	. .	48. 2	51. 1	52. 1	52. 9	53. 8	58 39. 95	— 11. 59	52. 21	6 57 36. 15	10. 69
	δ Canis Majoris	25	16. 6	17. 4	18. 4	19. 5	22. 5	43. 9	5. 3	8. 3	9. 3	10. 3	11. 4	3 43. 90	+ 0. 07	52. 22	7 2 51. 75	9. 76
	λ Geminorum	26	42. 5	43. 5	44. 3	45. 3	48. 2	8. 1	28. 2	31. 2	32. 0	33. 0	33. 9	11 8. 20	— 0. 10	52. 22	7 10 15. 88	13. 16
	δ Geminorum	†27	24. 8	25. 9	26. 9	27. 9	30. 9	51. 4	12. 3	15. 2	16. 0	17. 0	17. 8	12 51. 46	0. 13	52. 22	7 11 59. 11	13. 65
b. 2	Sun I	28	57. 3	58. 3	59. 4	0. 3	3. 1	23. 0	43. 1	46. 1	47. 0	47. 9	48. 9	3 23. 13	0. 00	54. 36	21 2 28. 77	. .
	Sun II	29	13. 7	14. 7	15. 6	16. 6	19. 3	39. 3	59. 3	2. 2	3. 2	4. 2	5. 0	5 39. 37	0. 00	—54. 36	21 4 45. 01	. .
	α Piscis Australis	†30	. .	. .	. .	. .	. .	. .	47. 3	48. 4	51. 5	52. 4	53. 4	50 50. 60	51. 76	+ 5. 62	22 50 4. 46	10. 10
N.	α Pegasi	31	49. 2	50. 1	50. 9	51. 8	52. 7	. .	10. 8	13. 5	14. 5	15. 4	16. 3	58 2. 52	11. 60	5. 62	22 57 56. 54	9. 20
	α Andromedæ	32	45. 8	46. 7	48. 7	51. 9	12. 7	13. 6	14. 7	35. 3	38. 4	40. 5	41. 5	1 13. 62	0. 07	5. 61	0 1 19. 16	9. 76
Y.	Polaris	33	. .	. .	. .	40. 0	16. 0	49. 5	29. 0	4. 0	. .	. .	. .	8 51. 70	4. 05	5. 60	1 8 53. 25	50. 88
N.	α Ceti	34	. .	. .	. .	. .	. .	. .	22. 4	25. 2	26. 0	27. 0	27. 8	55 25. 68	— 22. 47	5. 57	2 55 8. 78	10. 84
	Lacaille 1004	35	21. 6	22. 5	23. 6	24. 9	28. 1	50. 7	13. 7	17. 0	18. 0	19. 1	20. 1	6 50. 82	+ 0. 07	5. 57	3 6 56. 46	8. 49
	Lacaille 1114	36	17. 4	18. 4	19. 5	20. 5	23. 3	44. 0	4. 9	7. 9	8. 9	9. 7	10. 7	23 40. 11	+ 0. 04	5. 57	3 23 45. 72	9. 27
	Lacaille 1127	37	18. 8	22. 2	23. 3	24. 4	25. 6	. .	46. 3	47. 5	50. 8	51. 6	52. 7	26 36. 32	— 40. 39	5. 57	3 26 1. 50	8. 36
	η Tauri	38	15. 3	16. 4	17. 3	18. 2	19. 2	. .	38. 2	41. 1	42. 4	43. 2	44. 2	39 29. 55	— 12. 31	5. 56	3 39 22. 80	12. 63
	γ Eridani	39	9. 1	10. 0	11. 0	12. 0	14. 7	34. 4	54. 1	57. 0	57. 8	58. 7	59. 6	51 34. 40	+ 0. 01	5. 56	3 51 39. 97	9. 99
	B. A. C. 1250	40	40. 1	41. 1	42. 1	43. 3	46. 4	8. 6	30. 9	34. 1	35. 2	36. 3	37. 3	55 8. 67	0. 06	5. 56	3 55 14. 29	8. 64
	Lacaille 1341	21	54. 6	55. 7	58. 7	18. 6	19. 8	20. 7	21. 8	22. 7	43. 1	46. 3	47. 5	59 20. 86	0. 05	5. 56	3 59 26. 47	8. 66
	O. Arg. S. 2793	42	. .	. .	. .	26. 2	27. 3	28. 2	29. 3	30. 3	. .	. .	. .	59 28. 26	0. 09	5. 56	3 59 33. 91	8. 67
	Lacaille 1389	43	. .	. .	. .	34. 4	35. 4	36. 4	37. 5	38. 5	. .	. .	. .	8 36. 44	0. 10	5. 56	4 8 42. 10	8. 51
	Lacaille 1410	44	8. 2	9. 2	10. 4	11. 5	14. 7	37. 9	1. 2	4. 4	5. 5	6. 7	7. 8	12 37. 95	0. 08	5. 56	4 12 43. 59	8. 30
	B. A. C. 1355	45	19. 1	20. 0	20. 9	21. 9	45. 3	46. 2	47. 2	10. 6	11. 6	12. 7	13. 6	15 46. 28	0. 05	5. 56	4 15 51. 89	9. 09
	Lacaille 1451	46	40. 6	42. 6	43. 6	46. 5	6. 5	7. 4	8. 3	28. 4	31. 5	32. 5	34. 5	21 7. 49	0. 04	5. 56	4 21 13. 09	9. 24
	Lacaille 1474	47	23. 6	24. 5	25. 6	26. 5	29. 6	50. 9	12. 5	15. 5	16. 3	17. 3	18. 4	23 50. 97	+ 0. 05	5. 56	4 23 56. 58	9. 07
	α Tauri	48	34. 9	35. 8	36. 8	37. 8	40. 5	0. 4	20. 5	23. 3	24. 2	25. 2	26. 0	28 0. 49	— 0. 07	5. 56	4 28 5. 98	12. 44
	Lacaille 1531	49	30. 5	31. 5	32. 6	33. 7	36. 5	58. 0	19. 5	22. 7	23. 7	24. 8	25. 8	30 58. 12	+ 0. 05	5. 55	4 31 3. 72	9. 01
	* —28° 26′	50	37. 8	38. 7	39. 8	40. 8	43. 7	5. 6	27. 6	30. 5	31. 5	32. 7	33. 6	34 5. 66	0. 05	5. 55	4 34 11. 26	8. 91
	Lacaille 1549	51	42. 3	43. 3	44. 3	45. 3	48. 4	. .	31. 9	35. 0	36. 2	37. 2	38. 2	35 10. 21	+ 0. 04	5. 55	4 35 15. 80	8. 92
	μ Eridani	52	10. 9	11. 9	12. 8	13. 6	16. 4	35. 6	54. 9	57. 4	58. 5	59. 4	0. 2	38 35. 60	— 0. 02	5. 55	4 38 41. 13	10. 96
	Lacaille 1615	53	58. 3	59. 3	0. 4	1. 3	4. 2	25. 5	46. 7	49. 6	50. 7	51. 7	52. 6	45 25. 48	+ 0. 05	5. 55	4 45 31. 08	9. 20
	Lacaille 1648	54	. .	23. 8	24. 9	25. 8	28. 9	50. 1	11. 3	14. 4	15. 4	16. 5	. .	49 50. 12	+ 0. 05	+ 5. 55	4 49 55. 72	— 9. 18

10. *Middle wire increased one second.*
11–12. Cloudy.
5–13. Observations made with eye and ear.
13. Cloudy.
13. Very faint; only seen at intervals.
27. Unsteady.
30. Faint and tremulous.

r.
January 29, 5h. 40m. Image east 0. 12. Clamp west. Mercury very unsteady.
January 31. At 7h. 35m. Image east 0. 09. Clamp west.
Image west 0. 10. Clamp east.
Image east 0. 09. Clamp west.

Night cloudy; stars unsteady.

February 2. After passage of sun put clock back one minute.

		s.
January 28–29,	n. =	— 0. 100.
30,		— 0. 100.
31, 20h. to 2h.		— 0. 100.
6h. to 8h.		— 0. 215.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Jan. 29, 2. 3	— 49. 61	— 0. 061	— 0. 035
30, 4. 8	50. 87	— 0. 051	. .
31, 4. 4	— 52. 12	— 0. 035	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Feb. 2	Lacaille 1673	1	1.6	4.7	5.9	6.8	7.8	. .	27.6	28.7	31.6	32.5	33.5	54 18.07	— 38.21	+ 5.55	4 53 45.41	— 8.93
	Lacaille 1763	2	15.1	18.3	19.2	20.3	21.2	. .	40.4	41.6	44.4	45.4	46.4	9 31.23	— 37.36	5.55	5 8 59.42	9.20
	Lacaille 1798	3	41.9	42.9	43.7	44.7	47.8	9.1	30.4	33.5	34.5	35.5	36.5	14 9.14	+ 0.09	5.55	5 14 14.78	9.25
N.	B. A. C. 1688	4	. .	. .	. .	36.0	. .	38.0	38.9	40.0	. .	. .	. .	17 38.22	— 0.13	5.55	5 17 43.64	9.19
	B. A. C. 1713	5	23.4	24.5	25.6	26.6	29.7	50.8	12.3	15.3	16.5	17.3	18.3	21 50.94	+ 0.09	5.54	5 21 56.57	9.22
	α Leporis	6	12.0	13.0	14.0	14.9	17.7	37.7	58.0	0.8	1.8	2.8	3.6	26 37.81	0.05	5.54	5 26 43.40	10.00
	α Columbæ	7	8.0	9.1	10.2	11.4	14.6	37.6	0.7	4.1	5.1	6.3	7.3	34 37.67	0.14	5.54	5 34 43.35	8.54
	Lacaille 1960	8	. .	. .	. .	49.6	50.6	51.5	52.6	53.5	. .	. .	. .	36 51.56	0.13	5.54	5 36 57.23	9.17
	Lacaille 1978	9	2.6	3.5	4.4	5.4	8.5	29.4	50.4	53.5	54.5	55.5	56.3	40 29.46	0.08	5.54	5 40 35.08	— 9.56
	δ Ursæ Minoris, S. P.	†10	. .	. .	. .	27.3	41.7	58.3	11.5	27.0	. .	. .	. .	15 57.16	+ 4.04	5.53	18 16 6.73	+ 24.20
	51 Cephei	11	. .	. .	. .	. .	27.5	44.0	4.0	22.5	. .	. .	. .	35 54.50	— 14.13	5.53	6 35 45.90	— 127.56
	φ Geminorum	12	36.7	37.6	38.5	42.5	3.3	4.3	5.1	25.6	29.7	30.7	31.7	45 4.16	— 0.15	5.52	7 45 9.53	— 14.09
	λ Ursæ Minoris, S. P.	13	. .	. .	. .	43.0	29.0	17.0	5.0	48.0	. .	. .	. .	59 16.40	+ 12.49	5.51	19 59 34.40	+ 257.83
	ρ Argus	14	37.7	38.6	39.5	40.5	41.5	. .	0.6	3.5	4.5	5.4	6.5	1 51.83	— 12.16	5.51	8 1 45.18	— 10.27
	η Cancri	15	18.2	19.2	20.2	21.1	24.2	44.5	5.0	8.0	8.9	9.9	10.8	24 44.55	0.12	5.51	8 24 49.94	13.36
	Moon I	16	35.7	36.6	37.7	38.5	41.5	. .	22.0	24.6	25.7	26.6	27.4	27 1.63	0.10	5.50	8 27 7.03	. .
	δ Cancri	17	25.4	26.4	28.2	30.9	50.3	51.2	52.2	11.4	14.3	16.3	17.2	36 51.25	— 0.10	5.51	8 36 56.66	13.14
3	Sun I	18	1.8	2.6	3.6	4.6	7.0	27.1	47.3	50.3	51.3	52.1	53.0	6 27.34	+ 0.01	4.99	21 6 32.34	. .
	Sun II	19	3.0	6.0	7.0	8.0	9.0	. .	27.0	28.0	30.8	31.7	32.5	9 18.30	— 35.08	4.99	21 8 48.21	. .
	α Andromedæ	20	12.4	13.3	14.2	15.2	16.3	. .	36.3	39.3	40.5	41.3	42.4	1 27.12	12.80	4.86	0 1 19.18	9.75
	γ Pegasi	21	. .	. .	. .	4.9	5.9	6.8	7.8	8.6	. .	. .	. .	6 6.82	0.03	4.85	0 6 11.64	9.81
Y.	Polaris	†22	16.0	55.0	30.0	8.0	56.0	52.0	49.0	41.0	22.0	54.0	29.0	8 53.82	5.79	4.92	1 8 52.95	50.01
	β Arietis	23	34.7	35.7	36.6	37.5	40.3	0.9	21.2	24.1	25.0	26.0	27.0	47 0.82	0.07	4.89	1 47 5.64	11.07
	α Arietis	24	44.5	47.6	48.6	49.5	50.4	. .	9.3	10.1	13.2	14.0	15.0	0 0.22	— 36.47	4.89	1 59 28.64	— 11.37
	δ Ursæ Minoris, S. P.	25	. .	. .	. .	30.0	45.0	1.0	15.0	30.0	. .	. .	. .	16 0.20	+ 4.04	4.69	18 16 8.93	+ 24.00
	γ Geminorum	†26	20.3	21.3	22.3	23.2	25.8	45.9	6.0	8.8	9.7	10.6	11.4	29 45.94	— 0.09	4.68	6 29 50.53	— 13.08
	51 Cephei	†27	. .	. .	. .	9.0	30.0	45.5	7.0	25.0	. .	. .	.	35 47.30	4.99	4.68	6 35 47.00	127.37
	*78 W	28	2.0	2.9	3.8	4.7	7.7	28.8	50.1	53.2	54.2	55.1	56.0	52 28.95	— 0.14	4.67	6 52 33.48	13.90
	γ Canis Majoris	29	6.0	6.9	7.9	8.9	11.5	31.3	51.1	54.0	55.0	55.8	56.8	57 31.38	+ 0.04	4.66	6 57 36.08	10.59
	O. Arg. N. 7623	30	24.8	29.1	33.5	38.7	52.0	27.8	3.6	17.7	22.3	26.2	30.9	4 27.87	— 1.30	4.66	7 4 31.23	38.01
	O. Arg. N. 7755	31	36.8	41.8	46.7	51.7	5.7	45.9	24.0	39.9	43.5	48.7	53.2	11 45.26	— 1.35	4.65	7 11 48.56	39.04
	O. Arg. S. 6762	32	20.5	21.5	22.4	23.3	26.1	46.3	6.7	9.6	10.6	11.5	12.3	18 46.44	+ 0.06	4.65	7 18 51.15	10.43
	B. Z. 276,244	33	. .	. .	. .	45.0	46.0	46.8	47.8	48.7	. .	. .	. .	23 46.86	— 0.07	4.64	7 23 51.43	13.05
	B. Z. 276,245	34	21.5	22.5	23.5	24.4	27.2	. .	7.1	9.8	10.8	11.8	12.6	23 47.12	— 0.10	4.64	7 23 51.66	— 13.05
	λ Ursæ Minoris, S. P.	†35	. .	. .	. .	45.0	27.0	15.0	3.0	50.0	. .	. .	. .	59 16.00	+ 12.49	4.62	19 59 33.11	+ 257.76
	c^1 Cancri	36	13.2	14.2	15.2	16.2	18.9	38.3	57.6	0.5	1.4	2.3	3.1	29 38.26	— 0.07	4.59	8 29 42.78	— 12.56
	δ Cancri	37	26.3	27.3	28.2	29.1	32.0	52.2	12.2	15.2	16.2	17.2	18.1	36 52.18	0.11	4.59	8 36 56 66	13.14
	ε Hydræ	38	4.7	5.6	6.5	7.4	10.0	29.3	48.6	51.4	52.2	53.2	54.0	39 29.35	0.05	4.58	8 39 33.88	12.31
	α Cancri	39	32.7	33.7	34.5	35.3	38.2	57.9	17.4	20.3	21.2	22.1	22.9	50 57.84	0.07	4.58	8 51 2.35	12.65
	κ Cancri	40	52.7	53.6	54.6	55.5	58.3	17.7	37.2	40.1	41.0	41.9	42.7	0 17.75	0.07	4.57	9 0 22.25	12.54
	83 Cancri	41	52.2	53.2	54.3	55.2	58.1	18.2	38.4	41.4	42.3	43.2	44.0	11 18.23	0.11	4.56	9 11 22.68	12.91
	Moon II	42	44.3	45.2	46.2	47.2	50.0	9.9	29.7	32.5	33.5	34.4	35.3	18 9.84	0.07	4.56	9 18 14.33	. .
	10 Leonis	43	32.0	33.0	33.9	34.8	37.4	56.8	16.0	18.9	19.8	20.7	21.5	29 56.80	0.05	4.55	9 30 1.30	12.25
	ο Leonis	44	23.5	24.3	25.2	26.3	28.9	48.5	7.9	10.7	11.6	12.5	13.4	33 48.44	0.07	4.54	9 33 52.91	12.39
N.	β Lyræ	45	. .	. .	. .	54.9	56.0	57.0	58.0	59.1	. .	. .	. .	44 57.00	0.07	4.08	18 45 1.01	6.34
4	Sun I	46	5.0	5.9	6.9	7.8	10.5	30.4	50.4	53.3	54.2	55.1	55.9	10 30.49	0.00	4.00	21 10 34.49	. .
	Sun II	†47	20.7	21.6	22.4	23.4	26.2	46.2	6.0	9.0	10.0	10.8	11.6	12 46.17	0.00	4.00	21 12 50.17	. .
Y.	Polaris	48	. .	. .	.	38.0	17.0	50.0	28.0	3.0	. .	. .	. .	8 51.20	4.05	3.86	1 8 51.01	49.13
	β Arietis	49	35.8	36.7	37.6	38.5	41.4	1.7	22.3	25.1	26.0	27.0	27.9	47 1.82	0.06	3.95	1 47 5.71	11.06
	α Arietis	50	57.9	58.8	59.9	0.8	3.9	24.7	45.4	48.5	49.3	50.3	51.2	59 24.61	0.07	3.95	1 59 28.49	11.36
N.	Lacaille 910	51	. .	. .	. .	. .	. .	. .	8.1	9.0	11.8	12.7	13.6	48 11.04	— 48.51	3.80	2 47 26.33	9.21
	Lacaille 922	52	. .	. .	. .	23.3	24.4	25.3	26.3	27.3	. .	. .	. .	49 25.32	+ 0.05	3.80	2 49 29.17	— 9.01
	β Ursæ Minoris, S. P.	53	. .	. .	. .	10.6	7.0	4.2	0.6	57.2	. .	. .	. .	51 3.92	+ 0.36	3.80	2 51 8.08	+ 1.33
	α Ceti	54	40.3	41.2	42.1	43.0	45.5	4.9	23.9	26.9	27.8	28.6	29.5	55 4.88	— 0.03	+ 3.80	2 55 8.65	— 10.81

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 2, 4.1	+ 5.56	— 0.012	— 0.023
3, 0.0	4.83	. .	. .
3, 7.0	+ 4.66	— 0.045	. .

10. Tremulous.
22. Much blurred over, set B; high wind.
26. Very much blurred.
27. Very unsteady.
35. Unsteady.
47. Much blurred and undulating.

		s.
February 2,	21h. to 3h. n. =	— 0.100.
	3h. to 5h.	0.150.
	5h. to 9h.	0.240.
3,	21h. to 2h.	0.120.
	6h. to 10h.	— 0.240.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
eb. 4	δ Arietis	1	20.0	20.9	21.8	22.8	25.6	45.8	6.3	9.0	9.9	11.0	11.9	3 45.91	— 0.06	+ 3.79	3 3 49.64	— 11.91
	ζ Arietis	2	33.6	34.6	35.6	36.5	59.0	0.0	0.7	23.1	24.1	25.2	26.1	6 59.86	0.06	3.79	3 7 3.59	12.00
	α Persei	3	54.5	55.8	57.0	58.3	2.4	32.0	1.4	5.7	6.9	8.3	9.6	14 31.99	0.15	3.79	3 14 35.63	14.98
N.	ε Eridani	4	1.5	2.5	3.3	4.4	25.5	26.4	27.2	48.5	49.4	50.4	51.3	26 26.40	0.01	3.78	3 26 30.17	9.93
	γ Tauri	5	32.7	33.6	34.7	35.6	38.4	58.2	18.1	21.0	22.0	22.8	23.6	11 58.25	0.05	3.75	4 12 1.95	12.21
	ε Orionis	6	49.8	50.7	51.6	52.4	55.3	14.3	33.3	36.2	37.3	38.1	38.9	29 14.35	— 0.02	3.70	5 29 18.03	11.32
	μ Geminorum	7	12.8	13.8	14.8	15.7	18.7	- -	37.4	38.4	39.4	40.3	41.2	14 27.25	+ 12.03	3.68	6 14 42.96	— 13.63
	δ Ursæ Minoris, S. P.	8	- -	- -	- -	15.0	1.0	45.0	30.0	- -	- -	- -	- -	15 52.75	+ 10.26	3.68	18 16 6.69	+ 83.78
	51 Cephei	9	- -	- -	- -	- -	- -	43.5	2.7	21.0	- -	- -	- -	36 2.40	— 21.73	3.67	6 35 44.34	— 127.15
	α Leonis	10	38.4	39.3	40.3	41.2	43.9	3.5	23.3	26.1	27.0	27.8	28.7	1 3.59	0.06	3.55	10 1 7.08	12.31
	Moon II	11	0.4	1.2	2.2	3.0	5.8	25.3	45.1	47.9	48.8	49.6	50.5	6 25.44	0.04	3.54	10 6 28.94	. .
	ρ Leonis	12	9.9	11.7	12.8	15.5	34.0	34.8	35.6	54.3	57.0	58.0	59.7	25 34.85	— 0.05	3.53	10 25 38.33	— 12.13
	B. A. C. 7881, S. P.	13	- -	- -	- -	50.3	47.5	44.1	40.2	36.3	- -	- -	- -	29 43.68	+ 0.66	3.53	10 29 47.87	+ 0.34
6	γ Eridani	14	12.4	13.3	14.3	15.3	18.0	37.7	57.4	0.2	1.2	2.1	2.9	51 37.71	0.00	2.16	3 51 39.87	— 9.92
	B. A. C. 1340	†15	30.9	32.0	33.0	34.0	37.0	58.2	19.3	22.5	23.6	24.5	25.4	13 58.22	+ 0.02	2.14	4 14 0.38	9.08
	ε Tauri	16	11.2	12.2	13.1	14.2	16.9	37.2	57.4	0.4	1.3	2.2	3.2	20 37.21	— 0.06	2.13	4 20 39.28	12.57
	Lacaille 1483	17	17.7	18.6	19.6	20.6	23.6	44.5	5.2	8.2	9.2	10.3	11.2	24 44.43	+ 0.02	2.13	4 24 46.58	— 9.27
	A Draconis, S. P.	18	- -	- -	- -	17.0	14.4	12.3	9.6	7.2	- -	- -	- -	28 12.10	0.26	2.12	4 28 14.48	+ 2.03
	B. A. C. 1450	19	57.5	58.4	59.6	0.5	3.3	24.4	45.6	48.6	49.6	50.7	51.5	34 24.52	+ 0.02	2.12	4 34 26.66	— 9.18
	μ Eridani	20	14.3	15.3	16.2	17.2	19.8	39.0	58.2	1.0	1.9	2.8	3.6	38 39.03	— 0.02	2.12	4 38 41.13	10.91
	α Camelopardi	21	16.9	23.5	25.6	27.9	30.2	- -	12.8	15.3	21.6	23.7	25.8	41 52.33	— 1 23.10	2.11	4 40 31.34	21.92
	Lacaille 1615	22	1.8	2.8	3.7	4.8	7.7	28.9	50.1	53.1	54.1	55.1	56.1	45 28.93	+ 0.02	2.11	4 45 31.06	9.14
	ι Aurigæ	23	35.8	36.9	38.0	39.0	42.2	5.0	27.8	31.0	32.3	33.3	34.4	48 5.06	-- 0.09	2.11	4 48 7.08	14.20
	* — 28° 47′	24	- -	- -	- -	7.3	8.4	9.3	10.3	11.3	- -	- -	- -	53 9.32	+ 0.06	2.10	4 53 11.48	8.86
	ε Leporis	25	13.0	14.0	15.0	15.9	18.5	39.3	0.2	3.0	4.0	5.1	6.0	59 39.45	+ 0.02	2.10	4 59 41.57	— 9.45
	Uranus	26	57.8	58.7	59.6	0.7	23.3	24.3	25.3	48.1	49.2	50.1	51.1	2 24.38	— 0.06	2.10	5 2 26.42	. .
	δ Ursæ Minoris, S. P.	27	- -	- -	- -	33.0	16.5	3.0	47.0	33.0	- -	- -	- -	16 2.50	+ 2.86	2.03	18 16 7.39	+ 83.30
	γ Geminorum	28	22.9	23.9	24.8	25.7	28.5	48.4	8.4	11.3	12.3	13.2	14.1	29 48.50	— 0.07	2.02	6 29 50.45	— 13.06
	51 Cephei	29	- -	- -	- -	9.3	29.7	46.0	5.0	23.3	- -	- -	- -	35 46.66	3.54	2.01	6 35 45.13	126.62
	τ Leonis	†30	29.7	30.6	31.6	32.4	35.0	54.3	13.4	16.2	17.1	18.0	18.8	20 54.28	0.03	1.76	11 20 56.01	11.75
	ε Leonis	31	17.8	18.7	19.6	20.5	21.4	- -	38.7	41.5	42.4	43.3	44.1	23 30.80	11.21	1.76	11 23 21.35	11.67
	υ Leonis	32	32.1	33.0	34.0	35.0	37.6	56.8	15.8	18.6	19.4	20.3	21.2	29 56.71	— 0.02	1.75	11 29 58.44	11.67
	Moon II	33	18.2	19.1	20.1	22.9	23.9	- -	49.6	50.5	53.3	54.1	54.9	43 6.70	+ 0.03	1.74	11 43 8.47	. .
		34	41.8	42.6	43.5	44.5	47.1	6.5	26.3	29.2	30.0	31.0	31.7					
	B. A. C. 8314, S. P.	35	- -	- -	- -	13.9	11.0	8.0	5.2	2.4	- -	- -	- -	48 8.10	+ 0.41	1.74	11 48 10.25	6.92
	ο Virginis	36	12.5	13.4	14.4	15.3	16.1	- -	33.9	36.6	37.6	38.4	39.3	58 25.75	— 11.38	1.73	11 58 16.10	11.50
	4 Draconis	37	- -	- -	- -	40.0	43.2	47.7	52.9	57.2	- -	- -	- -	5 48.20	0.58	1.72	12 5 49.34	13.83
	Saturn I	38	2.0	3.0	3.8	4.7	7.3	26.6	45.6	48.3	49.4	50.1	51.0	22 26.53	— 0.02	1.71	12 22 28.22	. .
	Saturn II	39	40.3	41.2	42.2	44.7	45.7	- -	9.6	10.5	13.2	14.0	14.9	22 27.63	+ 0.06	1.71	12 22 29.40	. .
	β Corvi	40	45.9	46.9	48.0	49.0	51.8	12.3	33.1	36.2	37.2	38.2	39.1	27 12.52	0.03	1.70	12 27 14.25	11.82
	Polaris, S. P.	41	- -	- -	- -	- -	- -	- -	21.0	43.0	56.0	21.5	46.0	38 25.50	+ 30 22.52	1.67	1 8 49.69	47.01
Y.	α Lyræ	42	40.5	44.0	45.2	46.4	47.4	- -	9.5	10.7	14.2	15.3	16.3	32 58.95	— 42.98	1.60	18 32 17.57	5.72
	β Lyræ	43	57.3	58.4	59.4	2.5	3.5	- -	22.4	25.7	26.8	27.7	28.8	45 12.85	13.40	1.59	18 45 1.04	6.41
	γ Aquilæ	44	41.5	42.5	43.3	44.1	45.0	- -	2.7	5.6	6.5	7.4	8.3	39 54.69	11.39	1.56	19 39 44.86	8.66
7	Sun I	45	9.8	10.8	11.7	12.7	15.4	35.3	54.9	57.8	58.9	59.8	0.8	22 35.26	0.02	1.50	21 22 36.74	. .
	Sun II	46	24.8	25.7	26.6	27.6	30.6	50.2	10.1	13.0	14.0	14.9	15.8	24 50.30	0.02	1.50	21 24 51.78	. .
	α Andromedæ	†47	49.9	50.9	51.9	52.9	56.0	17.8	39.5	42.6	43.7	44.8	45.7	1 17.79	0.03	1.41	0 1 19.17	9.71
	Polaris	48	- -	- -	- -	35.0	12.0	46.0	24.0	1.0	- -	- -	-	8 47.60	0.00	1.38	1 8 48.98	46.61
	β Arietis	49	38.4	39.3	40.3	41.2	44.1	4.5	24.9	27.8	28.8	29.7	30.6	47 4.51	0.02	1.36	1 47 5.85	11.01
	α Arietis	50	0.7	1.7	2.6	3.6	6.4	27.3	48.1	51.0	52.1	53.0	54.0	59 27.32	0.02	1.35	1 59 28.65	11.31
	α Aurigæ	51	1.0	2.3	3.4	4.8	8.6	36.0	3.7	7.5	8.8	10.1	11.3	6 36.14	0.19	1.25	5 6 37.20	16.27
	β Tauri	52	11.5	12.5	13.6	14.6	17.6	39.3	31.0	34.3	35.4	36.4	37.4	17 39.42	0.12	1.24	5 17 40.54	13.93
	O. Arg. N. 5930	†53	7.3	9.9	12.8	14.8	17.4	20.0	22.8	24.3	27.3	30.2	32.6	23 19.95	0.54	1.24	5 23 20.65	25.61
	ε Orionis	†54	52.2	53.1	54.0	54.8	57.6	16.7	35.9	38.6	39.6	40.5	41.4	29 16.76	— 0.02	+ 1.23	5 29 17.97	— 11.29

15. Much blurred.
30. Image now fair.
47. Unsteady.
53. Through clouds.
54. Faint; through clouds.

February 4, 21h. to 5h. n. = — 0.100 s.
5h. to 11h. 0.170.
6, 3h. to 5h. 0.100.
5h. to 11h. 0.170.
11h. to 13h. — 0.120.

February 6. To 51 Cephei, very bad night; stars blurred and unsteady.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 4, 4.5	+ 3.74	— 0.035	— 0.023
6, 7.6	+ 1.96	— 0.053	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 7	α Orionis	1	21.7	22.7	23.6	24.5	27.3	46.5	5.9	8.6	9.6	10.5	11.4	47 46.57	— 0.05	+ 1.22	5 47 47.74	— 12.10
	δ Ursæ Minoris, S. P.	†2	..	..	..	33.0	17.0	3.5	48.5	33.5	..	..	..	16 3.10	+ 2.86	1.21	18 16 7.17	+ 83.04
	γ Geminorum	3	23.7	24.6	25.5	26.4	29.4	49.2	9.2	12.1	13.0	14.0	14.9	29 49.27	— 0.07	1.20	6 29 50.40	— 13.05
Y.	51 Cephei	4	..	..	..	11.0	29.5	45.5	5.0	24.0	..	..	..	35 47.00	3.54	1.20	6 35 44.66	126.33
	χ Leonis	5	33.6	34.5	35.6	36.4	39.1	58.5	17.9	20.6	21.5	22.4	23.2	57 58.48	— 0.05	1.05	10 57 59.48	11.87
	β Leonis	†6	40.2	41.1	42.1	43.1	45.8	..	3.8	4.7	5.6	6.5	7.3	41 54.02	+ 11.54	+ 1.03	11 42 6.59	11.63
9	Polaris	7	..	..	..	37.5	14.5	48.0	25.0	0.0	..	..	..	8 49.00	— 0.81	— 0.52	1 8 47.67	45.18
	α Arietis	8	27.2	28.2	29.1	30.0	31.0	..	49.8	52.8	53.8	54.7	55.8	59 41.24	— 12.17	0.55	1 59 28.52	— 11.28
N.	β Ursæ Minoris, S. P.	9	..	..	..	15.8	12.3	9.4	5.9	2.4	..	..	..	51 9.16	+ 0.25	0.70	14 51 8.71	+ 0.82
	α Ceti	10	44.7	45.6	46.5	47.5	50.2	9.2	28.4	31.2	32.1	33.0	33.8	55 9.29	— 0.02	0.70	2 55 8.57	— 10.73
	δ Arietis	11	24.3	25.2	26.2	27.2	29.9	50.1	10.5	13.4	14.3	15.3	16.2	3 50.24	0.03	0.70	3 3 49.51	11.82
	ζ Arietis	12	..	..	..	..	..	..	49.0	49.9	52.7	53.6	54.5	7 51.94	47.76	0.71	3 7 3.47	11.92
	ο Tauri	13	4.0	4.9	5.9	6.8	28.0	28.8	29.7	50.9	51.9	52.8	53.6	17 28.85	0.03	0.71	3 17 28.11	11.22
	Lacaille 1114	14	11.0	14.1	15.0	16.0	17.0	..	35.7	36.8	39.6	40.5	41.5	24 26.72	36.45	0.71	3 23 49.56:	9.14
	11 Tauri	15	11.1	12.2	13.2	14.2	17.1	38.2	59.3	2.2	3.3	4.3	5.2	32 38.21	0.03	0.72	3 32 37.46	12.53
	η Tauri	16	56.5	57.6	58.6	59.6	2.4	23.3	44.3	47.3	48.3	49.3	50.2	39 23.40	0.03	0.72	3 39 22.65	12.52
	27 Tauri	17	37.3	38.2	39.2	40.1	43.0	3.7	24.9	27.8	28.8	29.7	30.6	41 3.94	0.03	0.73	3 41 3.18	12.53
	ζ Persei	18	56.9	0.0	1.1	2.2	3.2	..	23.4	24.5	27.6	28.6	29.7	46 13.72	39.37	0.73	3 45 33.62	13.28
	γ Eridani	19	15.4	16.4	17.3	18.2	20.9	..	23.7	24.7	27.5	28.3	29.1	51 52.15	11.51	0.73	3 51 39.91	9.88
	A^1 Tauri	20	12.2	13.2	14.3	15.3	18.2	38.6	59.3	2.2	3.3	4.2	5.1	56 38.72	— 0.03	0.73	3 56 37.96	— 12.53
	Ψ^1 Draconis, S. P.	21	..	..	..	26.4	23.6	20.8	17.6	14.6	..	..	..	44 20.60	+ 0.21	0.79	3 44 20.02	+ 6.38
	α Orionis	22	23.6	24.8	25.7	26.5	29.2	48.5	7.7	10.5	11.4	12.4	13.3	47 48.51	— 0.03	0.79	5 47 47.69	— 12.08
	Lacaille 2096	23	15.1	16.0	17.0	17.9	20.8	42.0	3.2	6.4	7.3	8.4	9.4	55 42.14	+ 0.01	0.80	5 55 41.35	9.38
	B. A. C. 1946	†24	..	..	..	45.3	46.3	47.3	48.4	49.4	..	..	..	57 47.34	+ 0.04	0.80	5 57 46.58	9.31
	ν Orionis	25	23.0	23.9	24.8	25.7	28.5	48.2	8.0	10.8	11.8	12.8	13.6	59 48.28	— 0.04	0.80	5 59 47.44	12.76
	22 Camelopardi	26	46.9	49.4	57.1	46.3	48.8	51.1	53.7	56.3	45.5	53.2	56.1	3 51.31	— 0.25	0.80	5 3 50.26	25.42
	Lacaille 2190	27	..	..	..	6.7	7.7	8.6	9.5	10.5	..	..	..	8 8.69	+ 0.04	0.80	6 8 7.84	— 9.58
	40 Draconis, S. P.	28	..	..	..	20.1	15.1	10.7	5.1	0.4	..	..	..	10 10.48	0.40	0.80	6 10 10.08	+ 20.67
	41 Draconis, S. P.	29	..	..	..	27.4	21.5	16.5	11.7	6.8	..	..	..	10 16.78	0.40	0.80	6 10 16.38	20.67
	δ Ursæ Minoris, S. P.	30	..	..	..	37.5	22.2	8.0	51.7	37.2	..	..	..	16 7.32	+ 1.18	0.81	6 16 7.69	+ 82.49
	Lacaille 2254	†31	38.3	41.5	42.5	43.5	44.5	..	4.6	5.4	8.5	9.5	10.4	18 54.87	— 38.65	0.81	6 18 15.41	— 9.09
	Lacaille 2271	32	58.1	59.2	0.2	1.2	4.3	26.2	48.5	51.5	52.5	53.4	54.7	20 26.34	+ 0.01	0.81	6 20 25.54	9.12
	ξ^1 Canis Majoris	33	45.1	46.1	47.2	48.2	51.0	11.8	32.7	35.7	36.6	37.6	38.6	26 11.87	0.01	0.81	6 26 11.07	9.72
	Lacaille 2355	34	23.3	24.3	25.3	26.3	29.3	51.1	12.9	16.0	17.0	18.1	19.0	30 51.15	0.01	0.82	6 30 50.34	9.26
	Lacaille 2366	35	..	..	..	42.3	43.3	44.4	45.3	46.3	..	..	..	31 44.32	+ 0.04	0.82	6 31 43.54	9.28
	51 Cephei	36	..	..	..	9.5	29.0	45.7	5.0	23.0	..	..	..	35 46.44	— 1.46	0.82	6 35 44.16	125.72
	α Canis Majoris	37	44.1	45.0	45.9	46.9	49.8	9.6	29.6	32.4	33.4	34.4	35.3	39 9.67	0.00	0.82	6 39 8.85	10.23
	Lacaille 2448	38	..	..	..	5.0	6.0	6.9	7.9	9.0	..	..	..	42 6.96	+ 0.03	0.82	6 42 6.17	9.36
	Lacaille 2464	39	..	39.6	40.5	41.6	44.8	6.5	28.2	31.3	32.4	33.4	..	44 6.39	0.01	0.82	6 44 5.58	9.37
	Lalande 13393	40	51.9	53.0	54.0	55.0	58.0	..	39.9	42.9	43.9	44.8	45.8	48 18.92	0.00	0.83	6 48 18.09	9.75
	ε Canis Majoris	41	49.6	50.7	51.7	52.8	55.8	..	15.6	16.6	17.7	18.7	19.6	53 4.88	+ 12.79	0.83	6 53 16.84	9.41
	α^2 Geminorum	42	..	..	..	53.3	54.2	55.3	56.4	57.4	..	..	..	24 55.32	— 0.04	0.85	7 24 54.43	14.64
	* — 25° 49′	43	56.5	57.6	58.6	59.5	2.7	24.6	46.5	49.6	50.7	51.8	52.7	29 24.62	+ 0.01	0.85	7 29 23.78	9.90
	α Canis Minoris	44	46.6	47.5	48.5	49.4	52.3	11.3	30.5	33.3	34.3	35.2	36.0	32 11.35	— 0.03	0.85	7 32 10.47	12.09
	Moon II	45	7.5	8.5	9.6	10.6	13.4	33.9	54.8	57.7	58.5	59.5	0.5	20 34.05	0.00	1.07	14 20 32.98	..
	ρ Bootis	46	29.4	30.6	31.6	32.6	35.7	58.1	20.5	23.6	24.7	35.7	26.7	25 58.11	0.07	1.08	14 25 56.96	9.21
	μ Libræ	47	26.5	27.4	28.3	29.2	32.1	51.6	11.2	14.1	15.2	16.2	17.0	41 51.71	0.01	1.09	14 41 50.61	11.60
	α Libræ	48	55.5	56.6	57.6	58.5	1.2	21.1	40.9	43.9	44.8	45.7	46.6	43 21.13	0.00	1.09	14 43 20.04	— 11.70
	β Ursæ Minoris	†49	36.8	40.5	43.7	47.3	57.0	..	22.5	32.6	36.4	39.0	42.8	51 9.86	0.38	1.09	14 51 8.39	+ 0.84
	Ψ Bootis	50	9.2	10.3	11.2	12.3	15.3	36.8	58.4	1.6	2.6	3.6	4.7	58 36.91	0.06	1.10	14 58 35.75	— 8.97
	ν^1 Libræ	51	..	..	..	..	..	..	45.7	46.7	49.5	50.3	51.2	59 48.68	46.43	1.10	14 59 1.15	11.70
	β Libræ	52	16.2	17.1	18.1	19.0	21.6	41.0	0.3	3.1	4.0	4.9	5.8	9 41.01	0.01	1.10	15 9 39.90	— 11.22
10	Sun I	†53	7.8	8.8	9.6	10.5	13.3	..	53.0	55.8	56.6	57.6	58.5	34 33.15	0.06	1.35	21 34 31.74	..
Y.	Sun II	†54	22.3	23.2	24.0	24.9	27.7	47.6	7.4	10.2	11.1	12.1	13.0	36 47.59	0.05	1.35	21 36 46.19	..
	Venus I	55	10.5	11.5	12.4	13.3	16.1	..	55.2	57.9	58.9	59.8	0.7	34 35.63	— 0.05	— 1.38	22 34 34.20	+ 0.36

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	c.
	h.	s.	s.	s.
Feb.	7, 2.9	+ 1.32	— 0.033	— 0.023
	9, 8.1	— 0.87	— 0.033	..

2. Faint.
6. Star very faint.
24. Cloudy.
31. Faint; very unreliable.
49. Tremulous and blurred.
53. Rather hurried. 53–54. Clock error unreliable; observation rejected.

r.
February 7, 18h. to 2h. n. = 0.000.
5h. to 12h. — 0.170.
9, 1h. to 4h. 0.020.
4h. to 16h. — 0.070.
15h. 15m. Image east 0.08. Clamp west.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
eb. 10	α Piscis Australis	1	28.2	31.4	32.5	33.6	34.5	. .	54.7	55.7	58.7	59.8	0.7	50 44.98	— 38.96	— 1.50	22 50 4.52	— 10.09
N.	α Pegasi	2	56.0	56.9	57.7	58.6	59.6	. .	17.7	20.5	21.4	22.3	23.2	58 9.39	— 11.55	1.38	22 57 56.46	9.18
Y.	α Andromedæ	3	52.7	53.6	54.7	55.6	58.8	20.3	42.1	45.4	46.4	47.4	48.4	1 20.49	+ 0.03	1.39	0 1 19.13	9.68
	Polaris	4	38.0	14.0	51.0	40.0	23.0	. .	7.0	44.5	31.0	6.0	43.0	8 43.49	4.67	1.39	1 8 46.77	44.55
		5	9.5	46.5	24.0	59.0	48.0	42.0	41.0	31.0	8.5	45.0	21.0					
	β Arietis	6	40.9	42.0	42.8	43.8	46.7	7.0	27.5	30.4	31.3	32.3	33.3	47 7.09	0.01	1.39	1 47 5.71	10.97
	α Arietis	7	3.3	4.3	5.4	6.3	9.2	. .	28.0	29.0	29.9	30.9	31.9	59 17.82	+ 12.18	1.39	1 59 28.61	11.27
	* + 25° 44′	8	58.5	1.6	2.5	3.4	4.5	. .	23.8	24.9	27.9	28.8	29.8	42 14.57	— 37.32	1.41	5 41 35.84	13.74
	α Orionis	9	24.3	25.2	26.1	27.1	29.7	49.1	8.4	11.2	12.1	13.0	13.9	47 49.10	0.03	1.41	5 47 47.66	12.07
	B. Z. 518, 90	10	31.8	32.8	33.9	35.0	38.4	1.5	24.8	28.0	29.1	30.2	31.2	55 1.52	0.11	1.41	5 55 0.00	14.82
	Lalande 11513	11	12.7	13.8	14.8	15.9	17.0	. .	38.5	41.9	43.0	44.2	45.3	58 28.71	14.00	1.41	5 58 13.30	15.10
	Lalande 11528	12	9.5	13.0	14.1	15.0	16.2	. .	37.5	38.2	42.1	43.1	44.1	59 27.28	41.63	1.41	5 58 44.24	15.07
	Lalande 11684	13	24.9	25.9	26.8	27.8	28.7	. .	48.3	51.3	52.3	53.2	54.2	2 39.34	12.54	1.41	6 2 25.39	13.87
	Lalande 11714	14	16.5	17.4	18.5	19.5	20.3	. .	39.7	42.9	43.9	44.9	45.8	3 30.94	12.54	1.41	6 3 16.99	13.87
	B. Z. 522, 159	15	12.2	13.2	14.4	15.7	19.3	44.5	9.8	13.6	14.7	15.7	17.0	7 44.55	— 0.13	1.41	6 7 43.01	— 15.82
	δ Ursæ Minoris, S. P.	16	. .	. .	. .	37.0	21.0	7.0	52.0	37.0	. .	. .	. .	16 6.80	+ 2.02	1.41	18 16 7.41	+ 82.22
	* + 20° 20′	17	59.1	0.0	1.0	3.9	4.9	. .	34.2	35.3	38.0	39.0	39.9	20 49.53	+ 0.01	1.41	6 20 48.13	— 13.35
	ν Geminorum	18	27.6	28.6	29.5	30.6	33.3	53.8	14.1	17.1	18.1	19.0	19.9	20 53.78	— 0.07	1.41	6 20 52.30	13.34
	O. Arg. N. 7009	19	40.8	42.2	43.5	44.9	49.1	18.0	48.8	52.9	54.4	55.8	57.2	25 18.95	0.24	1.41	6 25 17.30	17.59
	Lalande 12614	20	59.3	0.1	1.0	2.0	2.8	. .	21.1	23.9	24.9	25.7	26.7	28 12.75	— 11.73	1.41	6 27 59.61	13.01
	γ Geminorum	21	26.3	27.3	28.0	29.0	32.0	51.9	11.8	14.8	15.6	16.6	17.5	29 51.89	+ 0.06	1.41	6 29 50.42	13.03
	α Canis Majoris	†22	44.7	45.6	46.5	47.5	50.2	10.2	30.2	33.1	34.0	34.8	35.8	39 10.24	+ 0.01	1.41	6 39 8.84	10.22
	δ Geminorum	23	34.2	35.2	36.1	37.0	40.0	0.6	51.4	54.2	55.3	56.1	56.9	12 0.64	— 0.07	1.41	7 11 59.16	13.62
	Polaris, S. P.	24	. .	. .	. .	21.0	43.5	8.0	29.5	42.0	. .	. .	. .	23 52.80	— 15 3.97	1.62	1 8 47.21	44.24
	Jupiter I	†25	51.8	52.7	53.7	56.3	57.2	. .	22.2	23.2	25.7	26.6	27.6	43 39.70	+ 0.07	1.63	13 43 38.14	. .
	Jupiter II	†26	17.6	18.5	19.5	20.3	23.1	. .	2.0	4.5	5.6	6.4	7.4	43 42.49	— 0.02	1.63	13 43 40.84	. .
	η Bootis	27	47.3	48.2	49.2	50.1	53.0	. .	33.4	36.4	37.3	38.2	39.1	48 13.22	0.06	1.64	13 48 11.52	10.41
	ε Bootis	28	35.7	36.7	37.5	38.6	41.9	3.2	24.9	28.3	29.3	30.3	31.2	39 3.42	— 0.06	1.65	14 39 1.71	9.29
	α Libræ	†29	32.6	33.5	34.4	37.2	38.2	. .	. .	. .	. .	. .	. .	42 65.18	+ 46.54	1.66	14 43 20.06	11.73
12	β Libræ	30	18.7	19.7	20.7	21.5	24.3	43.6	2.9	5.6	6.6	7.5	8.6	9 43.61	0.03	3.68	15 9 39.96	11.31
	* — 8° 2′	†31	25.4	26.4	27.2	28.1	30.9	50.2	9.6	12.4	13.3	14.2	15.0	11 50.25	0.03	3.68	15 11 46.60	11.27
	Weisse 254	32	56.1	56.9	57.8	58.8	1.5	21.2	40.8	43.7	44.7	45.5	46.2	15 21.20	+ 0.04	3.68	15 15 17.56	11.58
	B. A. C. 5091	33	21.6	23.8	25.6	27.7	29.6	. .	9.3	15.4	17.4	19.6	21.4	20 51.14	— 25.54	3.69	15 20 21.91	3.30
	Radcliffe 3398	34	45.5	47.3	48.7	50.3	55.4	29.0	3.2	7.8	9.4	11.0	12.4	25 29.09	0.12	3.69	15 25 25.28	5.23
	α Corona Borealis	35	56.0	57.1	58.1	59.0	0.0	. .	19.7	22.8	23.8	24.7	25.5	29 10.67	— 12.60	3.69	15 28 54.38	8.76
	Weisse 585	36	17.1	18.2	19.0	19.8	22.6	41.7	0.8	3.6	4.5	5.4	6.3	31 41.73	+ 0.02	3.69	15 31 38.06	10.74
	O. Arg. S. 14787	37	26.6	27.6	28.4	29.5	30.3	. .	48.6	51.4	52.5	53.3	54.1	34 40.23	— 11.64	3.70	15 34 24.89	11.80
	O. Arg. S. 14851-2	38	55.9	56.8	57.8	58.7	1.5	21.6	42.2	45.1	45.9	46.8	47.8	38 21.83	+ 0.05	3.70	15 38 18.18	11.94
	Weisse 792	39	46.2	47.0	48.0	48.9	51.8	11.4	31.4	34.2	35.0	35.9	36.8	42 11.41	0.04	3.70	15 42 7.75	11.60
	λ Libræ	40	2.3	3.1	4.1	5.0	8.0	28.2	48.7	51.6	52.5	53.5	54.4	45 28.31	0.05	3.70	15 45 24.66	11.99
	B. A. C. 5278	41	49.9	50.9	51.8	52.8	55.7	16.2	36.8	39.7	40.6	41.5	42.5	49 16.22	0.06	3.71	15 49 12.57	12.09
	δ Scorpii	42	52.9	53.9	54.9	55.9	58.7	19.4	40.0	43.1	44.1	45.0	45.9	52 19.44	+ 0.06	3.71	15 52 15.79	12.17
	β Scorpii	43	53.9	57.0	57.8	58.7	59.6	. .	18.0	19.0	21.8	22.7	23.6	58 9.21	— 35.52	3.71	15 57 29.98	11.94
	α Scorpii	44	38.5	39.5	40.5	41.4	44.5	5.7	27.2	30.2	31.2	32.2	33.1	21 5.82	+ 0.07	3.73	16 21 2.16	12.45
	τ Scorpii	45	58.7	59.8	0.7	1.8	4.8	26.6	48.3	51.4	52.4	53.4	54.4	27 26.57	0.07	3.74	16 27 22.90	12.60
	24 Scorpii	46	18.3	19.4	20.4	21.2	24.2	44.1	4.2	7.1	8.0	8.9	9.8	33 44.15	0.05	3.74	16 33 40.46	11.67
	Moon II	47	8.5	9.5	10.6	11.5	14.6	35.8	57.4	0.6	1.6	2.7	3.5	25 36.03	+ 0.06	3.78	17 25 32.31	. .
	α Ophiuchi	48	14.0	14.8	15.8	16.7	19.4	39.0	58.8	1.6	2.5	3.3	4.2	28 39.10	0.00	3.79	17 28 35.31	— 8.99
	δ Ursæ Minoris	†49	. .	. .	. .	. .	. .	. .	2.0	17.0	2.0	17.0	23.0	28 48.20	— 12 35.43	3.81	18 16 8.96	+ 81.61
	β Lyræ	50	35.8	36.9	38.0	39.0	42.3	5.1	28.1	31.3	32.4	33.5	34.5	45 5.17	0.05	3.85	18 45 1.27	— 6.56
N.	ζ Aquilæ	51	45.8	46.7	47.7	48.5	51.4	10.9	30.7	33.4	34.5	35.4	36.2	59 11.02	— 0.01	3.98	18 59 7.03	8.52
	α Aquilæ	52	45.3	46.3	47.2	48.1	50.8	10.2	29.5	32.3	33.2	34.1	34.9	44 10.17	0.00	4.01	19 44 6.16	9.02
13	Polaris	53	38.0	14.5	52.0	41.5	25.0	. .	9.0	47.0	34.0	9.0	44.0	8 45.71	+ 2.60	4.27	1 8 44.04	42.69
		54	10.5	48.0	23.5	4.5	50.0	44.5	46.0	34.0	13.5	48.0	23.5					
Y.	β Arietis	55	43.7	44.6	45.6	46.6	49.4	9.8	30.2	33.2	34.2	35.1	35.9	47 9.85	+ 0.02	— 4.25	1 47 5.62	— 10.92

22. Through clouds.
25. Faint; through clouds.
26. Faint.
29. Through clouds.
31. Declination uncertain.
49. Rather faint.

February 9–10, 15h. to 5h. n. = + 0.100 s.
5h. to 13h. — 0.120.
13h. to 18h. — 0.070.
12, n. = — 0.100.

10, 6h. 40m. Image east 0.08 r. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 10, 3.6	— 1.40	— 0.004	— 0.023
14.4	— 1.65	— .023	. .
12, 16.5	— 3.74	— 0.047	+ 0.016

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1810.0
			I.	II.	III.	IV.	V.	VI.	VII. 32.5	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Feb. 13 N.	α Arietis	1	6.0	7.0	7.9	9.0	11.9	32.7	53.3	56.4	57.3	58.3	59.2	59 32.64	+ 0.02	− 4.24	1 59 28.42	− 11.23
	Lacaille 1186	2	9.4	10.3	11.2	12.3	13.3	. .	32.5	35.6	36.5	37.5	38.4	36 23.70	− 12.34	4.31	3 36 7.05	8.91
	24 Tauri	3	52.0	52.9	53.9	54.9	17.8	18.6	19.6	42.6	43.6	44.5	45.5	39 18.72	+ 0.02	4.31	3 39 14.43	12.44
	η Tauri	4	0.0	1.0	2.0	2.9	5.8	26.7	47.7	50.7	51.7	52.7	53.6	39 26.80	0.02	4.31	3 39 22.51	12.45
	Lacaille 1231	5	52.4	53.3	54.4	55.3	58.3	19.7	41.1	44.3	45.3	46.3	47.2	42 19.78	0.01	4.31	3 42 15.48	8.77
	Lacaille 1259	6	. .	. .	. .	56.6	57.5	58.5	59.5	0.4	. .	. .	. .	46 58.50	+ 0.03	4.30	3 46 54.23	− 9.12
	ζ Ursæ Minoris, S. P.	7	. .	. .	. .	12.4	8.1	3.9	59.7	55.1	. .	. .	. .	49 3.84	− 0.20	4.30	3 48 59.34	+ 8.96
	γ Eridani	8	18.8	19.7	20.7	21.6	43.1	44.0	45.0	6.6	7.5	8.5	9.4	51 44.08	+ 0.01	4.30	3 51 39.79	− 9.81
	Lacaille 1324	9	25.5	26.6	27.6	28.6	31.7	53.5	15.4	18.6	19.6	20.6	21.6	56 53.57	0.01	4.30	3 56 49.28	8.60
	Lacaille 1370	10	51.9	52.8	53.8	54.9	57.8	19.0	40.2	43.2	44.3	45.2	46.2	4 19.03	0.01	4.29	4 4 14.75	8.92
	Lacaille 1373	11	. .	. .	. .	4.0	5.0	6.0	6.9	7.9	. .	. .	. .	5 5.96	0.04	4.29	4 5 1.71	8.92
	B. A. C. 1308	12	14.3	15.4	16.5	17.4	20.6	42.8	5.0	8.2	9.4	10.3	11.3	8 42.84	0.01	4.29	4 8 38.56	8.46
	Lacaille 1395	13	17.1	18.3	19.3	20.3	23.4	45.5	7.9	11.0	12.1	13.0	14.0	9 45.63	0.01	4.29	4 9 41.35	8.47
	Lacaille 1410	14	. .	. .	. .	45.4	46.5	47.6	48.7	49.7	. .	. .	. .	12 47.58	0.04	4.29	4 12 43.33	8.06
	Lacaille 1459	15	36.8	37.8	38.9	39.9	42.9	4.9	27.0	30.1	31.2	32.2	33.2	22 4.99	0.01	4.28	4 22 0.72	8.57
	Lacaille 1485	16	7.5	8.5	9.5	10.5	13.6	35.6	57.4	0.7	1.7	2.7	3.6	24 35.57	0.01	4.28	4 24 31.30	8.58
	Lacaille 1491	17	30.7	31.7	32.8	33.9	36.9	58.7	20.7	23.9	24.9	25.9	27.0	25 58.83	0.01	4.28	4 25 54.56	8.62
	Lacaille 1501	18	. .	. .	. .	41.2	42.3	43.2	44.3	45.2	. .	. .	. .	26 43.24	+ 0.04	4.28	4 26 39.00	8.63
	α Tauri	19	29.9	32.7	33.7	34.7	35.5	. .	53.5	54.6	57.3	58.2	59.2	28 44.92	− 39.92	4.28	4 28 5.72	12.28
	Lacaille 1531	20	. .	. .	. .	5.6	6.8	7.7	8.6	9.7	. .	.	. .	31 7.68	+ 0.04	4.27	4 31 3.45	8.80
	B. A. C. 1450	21	3.8	4.8	5.7	6.7	9.8	30.7	51.9	54.9	55.8	56.8	57.8	34 30.79	0.01	4.27	4 34 26.53	9.08
	μ Eridani	22	20.6	21.6	22.5	23.4	26.1	45.1	4.4	7.1	8.0	8.9	9.8	38 45.23	+ 0.01	4.27	4 38 40.97	10.79
	α Camelopardi	23	22.4	29.1	31.4	33.7	35.7	. .	18.7	20.9	27.4	29.5	31.8	41 58.06	− 1 22.74	4.27	4 40 31.05	21.63
	Lacaille 1613	24	38.5	39.4	40.4	41.4	44.4	5.9	27.6	30.7	31.6	32.6	33.5	45 6.00	+ 0.01	4.27	4 45 1.74	8.84
	ε Leporis	25	19.1	20.0	21.0	21.9	24.8	45.6	6.4	9.3	10.3	11.3	12.3	59 45.64	0.01	4.26	4 59 41.39	9.33
	Uranus I	26	. .	. .	. .	7.7	8.7	9.6	10.6	11.6	. .	. .	. .	2 9.64	+ 0.04	4.26	5 2 5.42	. .
	Uranus II	27	30.8	33.7	34.8	35.8	36.6	. .	55.4	56.4	59.3	0.2	1.1	2 46.41	− 36.39	4.26	5 2 5.76	. .
	α Aurigæ	28	6.1	7.5	8.8	10.2	14.0	41.3	8.9	12.9	14.2	15.4	16.6	6 41.45	+ 0.03	4.25	5 6 37.23	16.15
	β Orionis	29	38.5	39.5	40.5	41.3	44.0	3.3	22.7	25.5	26.5	27.3	28.3	8 3.40	0.01	4.25	5 7 59.16	10.53
	B. A. C. 1670 (1st *)	30	47.8	48.8	49.8	50.8	53.8	. .	35.9	39.0	40.0	41.0	41.9	16 14.88	0.00	4.25	5 16 10.63	9.18
	B. A. C. 1670 (2d *)	31	. .	. .	. .	13.2	14.2	15.1	16.1	17.1	. .	. .	. .	16 15.14	0.04	4.25	5 16 10.93	9.18
	B. A. C. 1713	32	33.0	34.0	35.0	36.0	39.0	0.3	21.9	24.9	25.9	26.9	27.8	22 0.43	0.01	4.24	5 21 56.20	9.04
	δ Orionis	33	42.3	43.2	44.0	45.0	47.7	6.8	26.0	28.7	29.6	30.5	31.5	25 6.85	0.01	4.24	5 25 2.62	11.26
	B. A. C. 1783	34	30.2	31.1	32.2	33.2	36.3	57.8	19.5	22.7	23.7	24.7	25.7	31 57.92	0.01	4.24	5 31 53.69	8.96
	Lacaille 1945	35	. .	. .	. .	39.6	40.7	41.6	42.7	43.7	. .	. .	. .	35 41.66	0.04	4.24	5 35 37.46	8.79
	Lacaille 1991	36	32.9	33.8	34.9	35.8	38.9	0.3	21.9	24.9	26.0	27.0	27.9	42 0.39	0.01	4.23	5 41 56.17	9.08
	Lacaille 2023	37	58.5	59.5	0.5	1.5	4.5	25.6	46.8	50.0	50.9	51.9	52.8	46 25.77	+ 0.01	4.23	5 46 21.55	9.28
	Lacaille 2062	38	. .	. .	. .	. .	. .	. .	43.7	44.7	47.5	48.5	49.4	51 46.76	− 48.63	4.23	5 50 53.90	9.49
	B. A. C. 1946	39	23.3	24.3	25.3	26.2	29.2	50.5	12.1	15.1	16.0	17.0	18.0	57 50.64	0.00	4.22	5 57 46.42	9.24
	ν Orionis	40	26.3	27.3	28.2	29.0	31.9	51.6	11.3	14.4	15.3	16.3	17.1	59 51.70	+ 0.02	4.22	5 59 47.50	12.72
	22 Camelopardi	41	. .	. .	. .	49.3	51.9	54.4	57.0	59.4	. .	. .	. .	3 54.40	0.14	4.22	6 3 50.32	25.28
	* — 27° 35′	42	15.1	16.2	17.2	18.2	21.0	42.3	3.7	6.7	7.8	8.8	9.8	6 42.44	0.01	4.22	6 6 38.23	9.17
	B. A. C. 2027	43	18.7	19.7	20.8	21.8	25.0	46.8	8.9	12.3	13.3	14.3	15.2	10 46.98	0.01	4.22	6 10 42.77	8.98
	Lacaille 2226	44	8.8	9.7	10.7	13.5	14.7	. .	33.7	34.6	35.7	36.7	39.7	14 23.78	+ 36.69	4.21	6 14 56.26	− 9.58
	δ Ursæ Minoris, S. P.	†45	. .	. .	. .	43.0	27.0	15.0	56.0	40.8	. .	. .	. .	16 12.36	− 0.86	4.21	18 16 7.29	+ 81.50
	Lacaille 2262	46	2.9	3.9	4.9	6.0	9.1	30.8	52.7	55.8	56.9	57.9	58.8	19 30.88	+ 0.01	4.21	6 19 26.68	− 9.14
	B. A. C. 2100	47	19.4	20.4	21.4	22.3	25.3	46.4	7.8	10.8	11.8	12.9	13.8	21 46.57	0.01	4.21	6 21 42.37	9.43
	ξ^1 Canis Majoris	48	48.7	49.5	50.5	51.5	54.5	15.4	36.3	39.2	40.2	41.1	42.0	26 15.35	0.01	4.21	6 26 11.15	9.67
	Lacaille 2342	49	. .	. .	. .	43.9	45.1	46.1	47.1	48.0	. .	. .	. .	29 46.04	0.04	4.20	6 29 41.88	9.48
	Lacaille 2370	50	20.4	21.3	22.3	23.2	26.2	47.0	7.9	10.9	11.9	12.9	13.7	32 47.06	0.01	4.20	6 32 42.87	9.70
	51 Cephei	51	. .	. .	. .	9.0	28.0	45.0	4.5	22.5	. .	. .	. .	35 45.80	1.02	4.20	6 35 42.62	124.69
	α Canis Majoris	52	47.4	48.4	49.3	50.3	53.0	12.9	32.9	35.8	36.8	37.8	38.6	39 13.02	0.01	4.20	6 39 8.83	10.19
	Lacaille 2448 (1st *)	53	42.3	43.4	44.6	45.6	48.6	. .	32.2	35.2	36.3	37.3	38.2	42 10.37	0.00	4.20	6 42 6.17	9.29
	Lacaille 2448 (2d *)	54	. .	. .	. .	9.2	10.2	11.2	12.3	13.3	. .	. .	. .	42 11.24	0.04	4.20	6 42 7.08	9.29
	Lacaille 2454	55	. .	. .	. .	16.7	17.8	18.8	19.8	20.7	. .	. .	. .	43 18.76	+ 0.04	− 4.20	6 43 14.60	− 9.35

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 13, 5.2	− 4.25	+ 0.035	+ 0.016

45. Star rested on c_3 three or four seconds.
February 13, n. = + 0.010.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
b. 13	O. Arg. S. 5725	1	52.3	53.4	54.3	55.4	58.5	..	41.8	45.0	46.1	47.0	48.0	43 20.18	0.00	— 4.20	6 43 15.98	— 9.33
	Lacaille 2507	2	..	..	..	35.5	36.5	37.5	38.5	39.4	..	..	..	48 37.48	+ 0.04	4.19	6 48 33.33	9.77
	Lacaille 2526	3	..	..	..	20.8	21.9	22.8	23.8	24.9	..	..	..	50 22.84	+ 0.04	4.19	6 50 18.69	9.64
N.	O. Arg. S. 5961	4	..	..	..	..	..	..	42.1	45.1	46.2	47.2	48.3	52 45.78	— 25.21	4.19	6 52 16.38	9.47
	Lacaille 2543	5	16.4	17.4	18.5	19.4	22.5	..	5.4	8.4	9.5	10.5	11.4	52 43.94	0.00	4.19	6 52 39.75	9.51
	Lacaille 2577	6	..	..	..	7.8	8.7	9.8	10.7	11.8	..	..	..	56 9.76	+ 0.04	4.19	6 56 5.61	9.53
	γ Canis Majoris	7	14.7	15.6	16.5	17.6	20.3	40.1	0.1	2.9	3.8	4.7	5.6	57 40.17	+ 0.01	4.19	6 57 35.99	10.51
	η Serpentis	8	..	..	..	..	..	..	0.6	1.6	4.2	5.0	5.9	15 3 46	— 44.75	4.74	18 14 13.97	— 10.08
	δ Ursæ Minoris	9	..	..	11.7	26.7	42.0	36.0	22.0	..	53.0	6.5	..	19 53.99	— 3 40.56	4.74	18 16 8.69	+ 81.38
	1 Aquilæ	10	25.7	26.6	27.6	28.4	31.1	50.5	9.8	12.6	13.5	14.5	15.3	27 50.51	+ 0.01	4.75	18 27 45.77	— 10.44
	Moon II	11	16.6	17.6	18.6	19.6	22.7	43.8	5.1	8.3	9.2	10.2	11.2	30 43.90	+ 0.01	4.75	18 30 39.16	..
	α Lyræ	12	47.2	50.6	51.6	52.9	53.9	..	16.2	17.3	20.7	21.8	22.9	33 5.51	— 42.93	4.75	18 32 17.83	5.91
	σ Sagittarii	13	24.1	25.2	26.2	27.2	30.2	51.4	13.0	16.0	17.0	17.9	18.9	46 51.55	+ 0.01	4.76	18 46 46.80	11.85
Y.	α Aquilæ	14	46.1	47.0	47.8	48.7	51.4	10.8	30.2	33.0	33.9	34.7	35.7	44 10.85	0.02	4.67	19 44 6.20	9.03
14	Sun I	†15	54.5	55.5	56.4	57.4	0.2	19.6	39.3	42.2	43.2	44.0	44.8	50 19.74	0.03	4.75	21 50 15.02	..
	Sun II	†16	8.1	8.9	9.8	10.6	13.3	33.3	53.0	55.9	56.6	57.5	58.3	52 33.21	+ 0.03	4.75	21 52 28.49	..
	α Persei	17	2.6	3.9	5.4	6.8	11.0	40.1	9.7	14.0	15.3	16.6	17.9	14 40.30	— 0.03	4.94	3 14 35.33	14.73
	17 Tauri	18	24.6	25.5	26.5	27.4	30.4	51.4	12.3	15.3	16.3	17.2	18.2	36 51.37	0.00	4.95	3 36 46.42	12.40
	Weisse (2) 845	19	45.2	46.3	47.3	48.2	51.1	..	33.0	36.0	37.0	37.9	38.8	38 12.08	— 0.01	4.95	3 38 7.12	12.41
	9 Pleiadum	20	..	..	..	12.4	13.4	14.3	15.2	16.2	..	..	..	38 14.30	+ 0.03	4.95	3 38 9.38	12.41
	10 Pleiadum	21	..	..	..	..	..	..	46.3	49.2	50.3	51.2	52.1	38 49.82	— 24.48	4.95	3 38 20.39	12.42
	15 Pleiadum	22	..	..	..	12.9	13.8	14.7	15.7	16.6	..	..	..	39 14.74	+ 0.03	4.95	3 39 9.82	12.42
	η Tauri	23	25.4	26.4	27.4	28.3	29.3	..	48.3	51.3	52.3	53.2	54.2	39 39.66	— 12.22	4.95	3 39 22.49	12.43
	18 Pleiadum	24	..	..	..	..	..	..	3.3	4.3	7.3	8.2	9.1	40 6.44	48.81	4.95	3 39 12.68	12.43
	27 Tauri	25	41.1	42.2	43.1	44.1	47.0	..	28.8	31.9	32.8	33.7	34.6	41 7.93	— 0.01	4.95	3 41 2.97	12.44
	28 Tauri	26		..	..	7.2	8.2	9.1	10.2	11.2	..	..	..	41 9.18	+ 0.03	4.95	3 41 4.26	12.44
	B. A. C. 1195	27	23.9	24.8	25.8	26.6	29.7	50.5	11.4	14.5	15.4	16.4	17.3	42 50.57	0.00	4.96	3 42 45.61	12.46
	B. Z. 391, 127	28	27.0	27.8	28.8	29.7	32.8	..	13.2	16.2	17.1	18.0	18.9	46 52.95	— 0.01	4.96	3 46 47.98	12.18
	B. Z. 391, 128	29	43.6	44.5	45.4	46.3	49.3	..	30.0	33.0	33.9	34.8	35.7	47 9.65	0.00	4.96	3 47 4.69	12.19
	γ Eridani	30	19.4	20.3	21.2	22.1	25.0	44.6	4.4	7.1	8.1	9.0	9.9	51 44.65	+ 0.03	4.96	3 51 39.72	9.79
	Lacaille 1317	31	17.2	18.2	19.3	20.3	23.3	44.6	6.2	9.3	10.2	11.2	12.2	55 44.73	0.04	4.96	3 55 39.81	8.75
	Lacaille 1341	32	2.7	3.6	4.7	5.6	8.8	..	53.2	56.4	57.5	58.5	59.5	59 31.05	0.04	4.96	3 59 26.13	8.42
	O. Arg. S. 2793	33	..	..	..	36.4	37.4	38.4	39.4	40.4	..	..	..	59 38.40	0.08	4.96	3 59 33.52	8.42
	Lacaille 1374	34	29.9	31.0	32.2	33.2	36.8	59.9	23.3	26.8	27.8	28.8	30.0	4 59.97	0.05	4.97	4 4 55.05	8.00
	Lacaille 1387	35	23.6	24.6	25.6	26.7	30.0	52.8	15.6	19.0	20.0	21.1	22.1	7 52.83	+ 0.05	4.97	4 7 47.91	8.18
	B. Z. 521, 33	36	31.6	32.6	33.5	34.5	37.5	58.5	19.5	22.5	23.5	24.5	25.4	29 58.51	— 0.01	4.98	4 29 53.52	12.99
	Lalande 8923	37	..	..	..	20.3	21.1	22.0	23.0	23.8	..	..	..	37 22.04	+ 0.04	4.99	4 37 17.09	10.77
	μ Eridani	38	21.3	22.3	23.2	24.1	26.8	45.9	5.0	7.9	8.8	9.7	10.5	38 45.95	+ 0.02	4.99	4 38 40.98	10.79
	O. Arg. N. 5260	39	58.0	59.4	0.9	2.4	6.7	37.3	8.0	12.4	14.0	15.4	16.6	44 37.37	— 0.04	4.99	4 44 32.34	16.88
	ι Aurigæ	40	42.5	43.6	44.7	45.7	49.0	11.8	34.6	38.0	39.0	40.0	41.0	48 11.81	+ 0.01	4.99	4 48 6.81	14.07
	B. Z. 398, 110	41	8.7	9.7	10.7	11.7	14.9	37.0	59.2	2.5	3.5	4.5	5.4	55 37.07	— 0.01	5.00	4 55 32.06	13.83
	B. Z. 398, 111	42	..	..	..	..	..	..	44.4	45.5	48.6	49.5	50.5	56 47.70	51.71	5.00	4 55 50.99	13.83
	B. Z. 398, 112	43	..	..	..	19.2	22.5	23.6	24.6	25.6	..	..	..	56 23.10	25.91	5.00	4 55 52.19	13.83
	B. Z. 513, 5	44	29.7	30.7	31.7	32.8	36.1	58.0	20.2	23.5	24.5	25.6	26.6	3 58.13	0.01	5.00	5 3 53.12	13.91
	B. Z. 513, 7	45	8.0	9.0	10.1	11.1	14.3	36.4	58.5	1.8	2.8	3.8	4.9	5 36.43	0.01	5.00	5 5 31.42	13.92
	β Tauri	46	17.6	18.6	19.6	20.7	23.7	45.4	7.2	10.4	11.4	12.3	13.3	17 45.47	— 0.01	5.01	5 17 40.45	13.83
	B. A. C. 1708	47	23.7	24.6	25.6	26.5	29.3	48.8	8.4	11.2	12.2	13.0	13.9	20 48.84	+ 0.03	5.01	5 20 43.86	10.29
	Weisse 603	48	20.0	21.0	22.0	24.6	25.6	..	..	..	..	..	..	24 22.64	44.88	5.01	5 25 2.51	11.24
	δ Orionis	49	43.0	43.9	44.9	45.7	48.5	7.6	26.7	29.4	30.3	31.2	32.1	25 7.57	0.02	5.01	5 25 2.58	11.24
	ε Orionis	50	58.4	59.3	0.1	1.0	3.7	22.8	41.9	44.8	45.8	46.6	47.4	29 22.89	0.02	5.02	5 29 17.89	11.20
15	α Aquilæ	51	48.2	49.1	50.0	50.9	53.6	12.9	32.3	35.0	36.0	37.0	37.8	44 12.98	0.01	6.82	19 44 6.17	9.07
N.	α Cygni	52	17.2	18.7	19.8	21.1	24.8	51.7	18.8	22.6	23.8	25.2	26.4	36 51.83	0.01	6.84	20 36 45.00	— 5.49
16	Sun I	†53	44.0	45.0	45.9	46.8	49.6	9.2	28.8	31.7	32.7	33.6	34.4	58 9.25	0.02	6.88	21 58 2.39	..
	Sun II	†54	57.0	58.0	59.0	59.8	2.7	22.2	41.9	44.8	45.6	46.5	47.4	0 22.26	+ 0.02	— 6.88	22 0 15.40	..

15. Unsteady; limb ill defined.
16. Unsteady; better defined.
53–54. Good observation.

February 14, 5h. 50m. Image east *r.* 0.05. Clamp west.
Image west 0.29. Clamp east.
Image east 0.03. Clamp west.

February 14. . . . . n. = — *s.* 0.050.
15–16, 19h. to 3h. . . — 0.010.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*c.*
h.	s.	s.	s.
Feb. 13, 18.5	— 4.75	— 0.036	+ 0.016
14, 4.7	4.99	0.035	+ 0.016
15, 21.3	— 6.86	— 0.024	..

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 16	α Pegasi	1	..	..	..	..	..	..	46.7	47.6	50.3	51.2	52.1	58 49.58	— 46.15	— 6.90	22 57 56.53	— 9.18
N.	Venus I	2	16.5	17.5	18.3	19.2	21.9	41.2	0.7	3.4	4.4	5.3	6.2	2 41.33	+ 0.02	6.90	23 2 34.45	+ 0.36
Y.	Polaris	3	14.5	51.5	30.0	6.0	55.0	45.0	45.0	33.0	12.0	47.0	24.0	8 49.36	0.25	6.83	1 8 42.78	— 40.50
	β Arietis	4	46.3	47.3	48.3	49.3	52.1	12.5	32.8	35.8	36.7	37.7	38.6	47 12.49	0.01	6.89	1 47 5.61	10.88
	α Arietis	5	8.7	9.7	10.7	11.7	14.5	35.3	56.2	59.1	0.1	1.0	1.9	59 35.35	0.01	6.90	1 59 28.46	11.19
	α Ceti	6	50.8	51.7	52.6	53.5	56.2	15.4	34.6	37.4	38.3	39.2	40.0	55 15.43	+ 0.01	6.92	2 55 8.52	10.63
	δ Arietis	7	30.4	31.3	32.2	33.2	36.1	56.3	16.6	19.5	20.5	21.4	22.4	3 56.35	0.00	6.92	3 3 49.43	11.71
	α Persei	8	4.6	6.0	7.3	8.7	12.8	42.1	11.7	15.9	17.2	18.6	19.9	14 42.25	— 0.03	6.92	3 14 35.30	14.67
	ε Eridani	9	11.9	12.8	13.7	14.7	17.4	36.7	56.2	59.0	0.0	0.9	1.7	26 36.82	+ 0.02	6.93	3 26 29.91	9.73
N.	16 Tauri	10	21.8	22.7	23.7	24.6	27.7	48.6	9.4	12.5	13.5	14.5	15.4	36 48.59	0.00	7.01	3 36 41.58	12.36
	B. A. C. 1163	11	..	..	..	56.6	57.6	58.5	59.5	0.5	..	..	..	38 58.54	0.03	7.01	3 38 51.56	12.39
	24 Tauri	12	..	..	..	19.5	20.5	21.3	22.3	23.3	..	..	..	39 21.38	+ 0.03	7.01	3 39 14.40	12.39
	η Tauri	13	27.5	28.5	29.4	30.4	31.4	..	50.3	53.3	54.3	55.4	56.3	39 41.68	— 12.22	7.01	3 39 22.45	12.40
	27 Tauri	14	43.2	44.2	45.3	46.2	49.1	..	30.9	33.8	34.9	35.8	36.8	41 10.02	— 0.01	7.01	3 41 3.00	12.41
	28 Tauri	15	..	..	..	9.2	10.3	11.0	12.1	13.2	..	..	..	41 11.16	+ 0.03	7.01	3 41 4.18	12.41
	B. A. C. 1188	16	..	..	..	56.9	57.9	58.8	59.8	0.6	..	..	..	41 58.80	0.03	7.01	3 41 51.82	12.42
	B. A. C. 1195	17	25.9	26.8	27.8	28.8	31.7	52.6	13.5	16.4	17.4	18.5	19.4	42 52.62	0.00	7.01	3 42 45.61	12.43
	τ⁸ Eridani	18	34.2	35.1	36.1	37.2	40.2	1.2	22.3	25.3	26.3	27.3	28.3	48 1.23	0.04	7.02	3 47 54.25	8.87
	Lacaille 1288	19	21.5	22.5	23.5	24.7	27.7	48.7	10.0	13.2	14.1	15.0	16.0	50 48.81	0.04	7.02	3 50 41.83	8.83
	Lacaille 1324	20	28.3	29.3	30.3	31.4	34.5	56.3	18.1	21.3	22.3	23.4	24.3	56 56.32	0.04	7.02	3 56 49.34	8.53
	Lacaille 1346	21	..	..	..	18.1	19.2	20.3	21.3	22.4	..	..	..	0 20.26	0.07	7.02	4 0 13.31	8.30
	o¹ Eridani	22	54.5	55.5	56.5	57.3	0.1	19.4	38.7	41.3	42.3	43.2	44.1	5 19.35	0.02	7.02	4 5 12.35	10.30
	B. A. C. 1308	23	17.0	18.1	19.2	20.1	23.3	45.5	7.7	10.9	11.9	13.0	13.9	8 45.51	+ 0.05	7.02	4 8 38.54	8.40
	Lacaille 1395	†24	46.2	47.3	48.3	49.4	50.3	..	36.9	38.0	41.0	42.0	43.0	10 14.24	— 25.86	7.02	4 9 41.36	8.40
	γ Tauri	25	..	..	..	..	..	..	52.3	53.2	55.9	56.8	57.7	12 55.18	— 46.34	7.03	4 12 1.81	12.02
	Lacaille 1459	26	39.5	40.5	41.5	42.6	45.7	7.6	29.6	33.0	33.9	34.8	35.9	22 7.69	+ 0.05	7.03	4 22 0.71	8.51
	Lacaille 1480	27	47.2	50.3	51.3	52.2	53.3	..	13.2	14.2	17.3	18.2	19.2	25 3.64	— 38.42	7.03	4 24 18.19	8.54
	Lacaille 1485	28	10.3	11.3	12.3	13.3	16.4	38.4	0.3	3.4	4.5	5.4	6.4	24 38.36	+ 0.05	7.03	4 24 31.38	8.55
	Lacaille 1491	29	59.6	0.6	1.5	2.6	3.6	..	..	26.7	27.8	28.8	29.8	26 14.93	— 13.23	7.03	4 25 54.67	8.56
	Lacaille 1501	30	18.0	20.2	21.2	24.2	45.0	45.9	47.1	8.0	11.1	12.2	14.3	26 46.11	+ 0.05	7.03	4 26 39.13	8.56
	α Tauri	31	10.9	11.9	12.7	13.6	14.6	..	32.7	35.5	36.4	37.4	38.3	28 24.40	— 11 65	7.03	4 28 5.72	12.24
	α Camelopardi	32	..	..	..	33.4	35.7	37.7	40.0	42.2	..	..	..	40 37.80	0.01	7.04	4 40 30.75	21.50
	ι Aurigæ	33	44.8	45.8	46.9	47.9	51.0	13.8	36.8	40.0	41.1	42.2	43.2	48 13.95	— 0.01	7.04	4 48 6.90	14.03
	Lacaille 1738	34	52.1	53.1	54.1	55.0	18.4	19.3	20.2	43.7	44.7	45.6	46.7	5 19.35	+ 0.08	7.05	5 5 12.38	8.97
	β Orionis	35	41.3	42.3	43.3	44.2	46.8	6.2	25.6	28.3	29.3	30.2	31.0	8 6.23	0.03	7.05	5 7 59.21	10.48
	Lacaille 1779	36	41.2	42.2	43.1	44.2	47.2	8.3	29.7	32.5	33.6	34.6	35.5	11 8.37	0.07	7.05	5 11 1.39	9.05
	B. A. C. 1670 (1st *)	37	50.5	51.6	52.7	53.6	56.6	..	38.7	41.8	42.8	43.7	44.8	16 17.68	0.06	7.05	5 16 10.69	9.12
	B. A. C. 1670 (2d *)	†38	..	..	..	16.0	16.9	17.8	18.9	19.9	..	..	..	16 17.92	+ 0.10	7.05	5 16 10.97	9.12
	B. A. C. 1706	39	..	..	..	31.9	35.6	38.5	42.3	45.5	..	..	..	21 38.76	— 0.29	7.05	5 21 31.42	29.95
	α Leporis	40	24.4	25.4	26.4	27.3	30.1	50.1	10.2	13.2	14.2	15.1	15.9	26 50.21	+ 0.06	7.06	5 26 43.21	9.79
	Lacaille 1913	†41	..	..	..	19.2	20.4	21.5	22.4	23.3	..	..	..	32 21.36	0.11	7.06	5 32 14.41:	9.01
	α Columbæ	42	20.4	21.5	22.5	23.6	27.0	50.0	13.2	16.5	17.6	18.7	19.7	34 50.06	0.10	7.06	5 34 43.10	— 8.28
	Ψ¹ Draconis, S. P.	43	..	..	..	21.5	24.3	27.6	30.1	33.0	..	..	..	44 27.30	+ 0.24	7.06	5 44 20.48	+ 5.93
	α Orionis	44	29.8	30.8	31.7	32.6	35.3	54.5	13.9	16.5	17.6	18.5	19.3	47 54.59	0.00	7.06	5 47 47.53	— 11.99
	22 Camelopardi	45	47.2	49.6	52.5	54.9	2.4	56.9	51.5	59.2	2.0	4.4	6.7	3 57.03	— 0.27	7.07	6 3 49.69	— 25.17
	δ Ursæ Minoris, S. P.	46	20.0	34.7	49.7	5.5	51.0	..	..	15.5	30.5	45.5	..	12 24.05	+ 3 52.08	7.08	18 16 8.05	+ 80.77
21	Sun I	47	4.7	5.6	6.6	7.5	10.3	29.5	49.0	51.9	52.7	53.7	54.5	17 29.64	0.00	11.98	22 17 17.66	..
Y.	Sun II	48	16.8	17.6	18.6	19.6	22.2	41.9	1.2	4.1	5.0	6.0	6.9	19 41.81	0.00	11.98	22 19 29.83	..
	α Andromedæ	49	3.2	4.2	5.2	6.3	9.3	31.0	52.8	55.9	56.9	58.0	59.0	1 31.07	0.00	12.03	0 1 19.04	— 9.61
	Polaris	†50	17.0	52.0	30.0	6.0	52.0	..	48.0	39.0	16.0	53.0	28.0	8 52.10	— 0.62	12.00	1 8 39.48	36.94
22	α Cygni	51	24.4	25.6	27.0	28.4	32.0	58.9	25.7	30.0	31.0	32.3	33.8	36 59.01	0.04	13.70	20 36 45.27	5.60
N.	Mercury II	52	25.4	26.4	27.8	28.3	31.1	50.8	10.7	13.5	14.6	15.5	16.4	56 50.95	0.00	13.72	20 56 37.23	0.33
	ζ Cygni	53	17.9	18.9	19.9	21.0	22.1	..	42.1	45.2	46.3	47.4	48.4	7 32.92	— 12.88	—13.72	21 7 6.32	— 7.58

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 16, 2.6	— 6.91	— 0.024	+ 0.016
16, 4.8	7.04	— 0.024	+ 0.016
21, 0.0	— 12.03	..	— 0.004

24. Double angle 83°; distance 30″; coarse, mag. 10½.
38. Distance 3″; angle 14°.
41. Cloudy; faint, unreliable.
50. B_5 very faint.

	r.	
February 16, 6.5h.	Image west 0.02.	Clamp west.
	Image west 0.27.	Clamp east.
	Image west 0.01.	Clamp west.

s.

February 16, 3h. to 5h. n. = — 0.050.
5h. to 7h. — 0.120.
21, ... = 0.000.

Telescope was jarred during second reversal.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
b. 23	Sun I	†1	44.3	45.3	46.2	47.1	49.6	9.2	28.7	31.3	32.3	33.2	34.0	25 9.20	0.00	—13.76	22 24 55.44	. .
N.	Sun II	2	56.1	57.0	57.9	58.8	1.4	21.0	40.4	43.4	44.3	45.2	45.9	27 21.04	0.00	13.76	22 27 7.28	. .
	α Andromedæ	3	5.2	6.1	7.2	8.1	10.3	32.8	54.7	57.7	58.7	59.7	0.8	1 32.85	— 0.01	13.81	0 1 19.03	— 9.60
Y.	Polaris	†4	. .	. .	. .	41.0	17.0	49.0	27.0	4.0	. .	. .	. .	8 51.60	+ 0.37	13.80	1 8 38.17	35.87
	β Arietis	5	53.3	54.3	55.2	56.2	59.0	19.4	39.8	42.7	43.7	44.6	45.6	47 19.44	— 0.01	13.82	1 47 5.61	10.79
	α Arietis	6	15.6	16.5	17.6	18.5	21.4	42.2	3.0	6.0	6.9	7.9	8.8	59 42.22	0.01	13.83	1 59 28.38	11.09
	ε Arietis	7	11.8	12.8	13.8	14.8	17.7	38.0	58.6	1.6	2.6	3.4	4.4	51 38.14	0.01	13.86	2 51 24.27	11.53
	Moon I	†8	51.0	51.9	52.9	53.9	56.8	17.4	38.2	41.1	42.0	43.0	43.8	54 17.45	0.01	13.86	2 54 3.58	. .
	δ Arietis	9	37.1	38.2	39.1	40.1	43.0	3.2	23.4	26.4	27.4	28.3	29.2	4 3.22	0.01	13.86	3 3 49.35	11.59
	η Tauri	10	9.4	10.4	11.4	12.4	15.4	36.2	57.1	0.2	1.1	2.0	3.0	39 36.24	0.04	13.88	3 39 22.32	12.28
	33 Tauri	11	45.7	46.5	47.5	48.5	51.5	12.2	13.0	16.0	17.0	17.8	18.8	49 12.23	0.04	13.88	3 48 58.31	12.30
	A^1 Tauri	12	25.0	26.1	27.1	28.1	30.9	51.5	12.2	15.0	16.2	17.0	18.0	56 51.55	— 0.04	13.89	3 56 37.62	12.29
	o^1 Eridani	13	1.3	2.3	3.2	4.0	6.8	26.2	45.3	48.3	49.0	50.0	50.7	5 26.10	+ 0.01	13.89	4 5 12.22	10.18
N.	γ Tauri	14	50.3	51.2	52.2	53.0	55.6	15.7	35.4	38.5	39.4	40.2	41.1	12 15.69	— 0.03	13.94	4 12 1.72	11.93
	Lacaille 1431	15	10.3	11.3	12.4	13.5	16.4	37.2	58.5	1.6	2.5	3.5	4.5	17 37.43	+ 0.04	13.95	4 17 23.52	8.76
	Lacaille 1449	16	. .	. .	. .	35.5	36.6	37.7	38.8	40.0	. .	. .	. .	20 37.72	0.09	13.95	4 20 23.86	7.67
	Lacaille 1480	17	3.8	5.0	6.2	7.0	10.2	32.0	53.8	57.1	58.1	59.1	0.0	24 32.03	+ 0.05	13.95	4 24 18.13	8.39
	α Tauri	18	54.0	54.9	55.8	56.8	59.7	. .	39.5	42.2	43.3	44.1	45.0	28 19.53	— 0.04	13 95	4 28 5.54	12.12
	Lacaille 1570	19	47.6	48.7	49.7	50.7	53.8	15.5	37.2	40.3	41.4	42.4	43.4	39 15.52	+ 0.04	13.96	4 39 1.60	8.53
	Lacaille 1642	20	. .	. .	. .	. .	. .	. .	42.1	43.2	46.4	47.6	48.8	49 45.62	— 56.94	13.96	4 48 34.72	7.44
	Lacaille 1652	21	5.3	6.3	7.6	8.8	12.1	. .	1.0	4.5	5.8	6.8	7.9	49 36.61	+ 0.03	13.97	4 49 22.67	7.44
	Lacaille 1673	22	30.9	32.0	33.0	34.0	37.0	58.9	20.9	24.0	24.9	25.8	26.8	53 58.93	0.04	13.97	4 53 45.00	8.53
	ε Leporis	23	28.8	29.8	30.7	31.7	34.5	55.3	16.0	19.0	19.9	20.8	21.8	59 55.30	+ 0.03	13.97	4 59 41.36	— 9.15
	ε Ursæ Minoris, S. P.	24	. .	. .	. .	. .	. .	. .	37.4	57.5	3.7	10.8	17.2	3 1.32	— 2 44.89	13.97	17 0 2.46	+ 24.66
	Lacaille 1753	25	. .	. .	. .	36.4	37.5	38.4	39.5	40.4	. .	. .	. .	7 38.44	+ 0.11	13.97	5 7 24.58	— 8.72
	* — 27° 20′	26	4.0	7.2	8.2	9.2	10.2	. .	29.5	30.6	33.7	34.6	35.6	8 20.28	— 37.68	13.97	5 7 28.63	8.72
	Lacaille 1763	27	. .	. .	. .	. .	. .	. .	59.7	0.7	3.7	4.6	5.7	10 2.88	— 49.79	13.98	5 8 59.11	8.82
	Lacaille 1787	28	. .	. .	. .	1.9	3.1	4.1	5.0	6.0	. .	. .	. .	12 4.02	+ 0.13	13.98	5 11 50.17	8.32
	Lacaille 1798	29	26.3	27.3	28.3	29.3	30.3	. .	49.5	52.8	53.8	54.8	55.7	14 40.81	— 12.37	13.98	5 14 14.46	8.87
	Lacaille 1827	30	50.9	51.9	53.1	54.1	57.3	19.6	42.2	45.4	46.5	47.6	48.6	18 19.75	+ 0.10	13.98	5 18 5.87	8.30
	B. A. C. 1706	31	. .	. .	. .	38.8	42.2	45.7	49.1	52.5	. .	. .	. .	21 45.66	— 0.74	13.99	5 21 30.93	— 29.43
	δ Ursæ Minoris, S. P.	32	46.0	31.0	45.5	2.5	16.5	. .	10.5	28.0	12.0	27.0	43.0	25 50.20	9 24.09	14.01	18 16 12.10	+ 78.54
	51 Cephei	33	. .	. .	. .	20.5	39.0	56.0	16.0	33.5	. .	. .	. .	35 57.30	— 3.14	14.02	6 35 40.14	— 121.30
	Lacaille 2442	34	45.0	46.0	47.0	47.8	51.2	. .	35.1	38.2	39.3	40.3	41.3	41 13.12	+ 0.08	14.02	6 40 59.18	9.05
	Lacaille 2461	†35	. .	. .	. .	10.5	12.4	13.3	14.3	15.1	. .	. .	. .	44 13.12	0.10	14.02	6 43 59.20	9.57
	Lacaille 2462	†36	52.1	53.0	54.2	55.0	58.0	. .	40.0	42.8	43.8	44.8	45.8	44 18.95	0.05	14.02	6 44 4.98	9.58
	* — 24° 17′	37	49.4	50.4	51.3	52.3	55.3	. .	. .	. .	. .	. .	. .	47 51.74	24.63	14.03	6 48 2.34	9.57
	o^1 Canis Majoris	38	16.2	17.2	18.1	19.0	22.0	. .	4.0	6.8	7.9	9.0	9.9	48 43.01	+ 0.06	14.03	6 48 29.04	9.60
	Lacaille 2526	39	. .	. .	. .	. .	. .	. .	53.7	57.0	57.9	58.9	59.7	50 57.44	— 24.71	14.03	6 50 18.70	9.49
	30 Canis Majoris	40	51.0	52.0	52.9	53.8	57.0	17.8	39.0	42.0	43.0	43.9	44.8	13 17.93	+ 0.07	14.04	7 13 3.96	9.72
	Lacaille 2726	41	21.3	22.3	23.3	24.2	27.1	. .	. .	. .	. .	. .	. .	13 23.64	24.71	14.04	7 13 34.31	9.72
	B. A. C. 2461	42	16.3	17.4	18.4	19.5	44.0	45.0	46.2	11.1	12.0	12.9	13.8	19 45.15	0.10	14.04	7 19 31.21	9.17
	B. A. C. 2466	43	. .	. .	. .	41.5	42.5	43.5	44.6	45.6	. .	. .	. .	20 43.54	0.13	14.04	7 20 29.63	9.18
	g Puppis	44	. .	. .	. .	4.5	5.4	6.4	7.4	8.4	. .	. .	. .	29 6.42	0.11	14.05	7 28 52.48	9.75
	Lacaille 2864	45	42.9	44.0	44.9	45.8	48.7	10.2	31.3	34.4	35.5	36.5	37.4	30 10.15	+ 0.08	14.05	7 29 56.18	9.76
	α Canis Minoris	46	22.6	23.5	24.4	25.3	26.2	. .	6.3	7.3	10.1	11.0	11.7	32 46.84	— 22.51	14.05	7 32 10.28	11.99
24	Sun I	47	17.2	20.1	21.0	21.9	22.7	. .	40.3	41.2	43.9	44.7	45.7	29 31.87	34.10	14.52	22 28 43.25	. .
	Sun II	48	44.6	45.4	46.4	47.3	50.0	9.3	28.8	31.7	32.5	33.4	34.4	31 9.44	0.00	14.52	22 30 54.92	. .
Y.	Moon I	49	51.7	52.7	53.7	54.6	57.5	18.5	39.4	42.5	43.5	44.4	45.3	47 18.62	0.01	14.63	3 47 3.98	. .
	A^1 Tauri	50	25.9	26.9	27.9	28.8	31.7	52.3	12.9	15.8	16.8	17.7	18.7	56 52.31	0.01	14.63	3 56 37.67	12.26
	ε Tauri	51	27.7	28.7	29.6	30.5	33.4	53.6	13.8	16.8	17.7	18.6	19.5	20 53.63	0.01	14.64	4 20 38.98	12.28
	α Tauri	52	54.6	55.6	56.6	57.5	0.2	20.1	40.1	43.0	43.9	44.8	45.7	28 20.19	0.01	14.64	4 28 5.54	— 12.10
25	Sun I	53	20.8	21.7	22.6	26.3	44.8	45.6	46.5	5.2	8.7	9.6	10.5	32 45.66	0.01	15.33	22 32 30.32	. .
N.	Sun II	†54	32.1	33.0	33.9	34.8	37.6	57.0	16.5	19.2	20.2	21.0	22.0	34 57.03	— 0.01	—15.33	22 34 41.69	. .

1. Sun had been shining on west pier through a slit two inches broad.
4. Unsteady.
8. Fine observation.
35. Duplex.
36. Duplex.
54. Good observation of sun.

		s.
February 22–23,	20h. to 3h. n. =	— 0.010.
	3h. to 5h.	0.090.
	5h. to 8h.	0.170.
24,	. . .	— 0.010.

CORRECTIONS, &.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 23, 5.3	— 13.98	— 0.031	— 0.004
24, 4.4	— 14.64	— 0.021	— 0.004

Date.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Feb. 25	Venus I	1	35. 8	36. 8	37. 8	38. 7	41. 4	0. 6	19. 8	22. 5	23. 6	24. 5	25. 3	44 0. 62	— 0. 01	—15. 35	23 43 45. 26	+ 0. 36
	Polaris . . .	2	45. 0	22. 0	59. 5	48. 0	30. 5	. .	11. 5	48. 5	38. 0	10. 0	48. 0	8 49. 79	+ 2. 81	15. 38	1 8 37. 22	— 34. 92
		3	17. 0	53. 5	29. 5	6. 0	54. 0	49. 0	46. 0	36. 0	13. 0	50. 5	25. 0					
N.	θ Ceti	4	1. 8	2. 7	3. 5	4. 4	7. 1	26. 5	45. 8	48. 7	49. 7	50. 5	51. 4	17 26. 55	— 0. 01	15. 38	1 17 11. 16	9. 55
	β Arietis	5	54. 7	55. 7	56. 7	57. 5	0. 5	20. 8	41. 2	44. 2	45. 1	46. 1	46. 9	47 20. 85	+ 0. 01	15. 39	1 47 5. 47	10. 77
	ε Tauri	6	28. 4	29. 4	30. 3	31. 3	34. 2	54. 3	14. 5	17. 5	18. 4	19. 4	20. 3	20 54. 36	+ 0. 01	15. 45	4 20 38. 92	12. 26
	μ Eridani	7	31. 8	32. 5	33. 5	34. 4	37. 1	56. 2	15. 4	18. 2	19. 1	20. 0	20. 8	38 56. 27	— 0. 01	15. 45	4 38 40. 81	10. 61
	Moon I	†8	4. 7	5. 6	6. 7	7. 6	10. 7	31. 7	53. 0	55. 9	56. 8	57. 9	58. 8	40 31. 76	+ 0. 01	15. 45	4 40 16. 32	. .
	B. A. C. 1511 . .	9	15. 9	17. 0	18. 1	19. 2	22. 4	45. 7	9. 2	12. 7	13. 8	14. 8	15. 9	46 45. 88	— 0. 03	15. 46	4 46 30. 39	7. 77
	Lacaille 1652 . .	†10	. .	. .	. .	. .	. .	. .	31. 7	32. 6	36. 4	37. 2	38. 3	50 35. 24	57. 04	15. 46	4 49 22. 74:	7. 39
	ι Tauri	11	10. 0	11. 0	12. 0	12. 8	13. 8	. .	32. 6	35. 4	36. 4	37. 4	38. 3	55 23. 97	— 12. 00	15. 46	4 54 56. 51	12. 74
	l Tauri	12	33. 3	34. 3	35. 3	36. 3	39. 1	59. 5	19. 9	22. 8	23. 7	24. 8	25. 6	59 59. 51	+ 0. 01	15. 46	4 59 44. 06	12. 67
	β Orionis	†13	49. 7	50. 6	51. 6	52. 5	55. 1	14. 5	33. 8	36. 6	37. 5	38. 5	39. 3	8 14. 52	— 0. 01	15. 46	5 7 59. 05	10. 33
	β Tauri	14	27. 8	28. 8	29. 9	30. 8	54. 7	55. 6	56. 6	20. 6	21. 7	22. 6	23. 7	17 55. 71	+ 0. 01	15. 47	5 17 40. 25	13. 64
	B. A. C. 1706 . .	15	. .	. .	. .	39. 2	42. 5	45. 7	49. 4	52. 8	. .	. .	. .	21 45. 92	+ 0. 21	15. 47	5 21 30. 66	— 29. 30
	δ Ursæ Minoris, S.P.	16	47. 5	32. 7	17. 5	32. 5	14. 7	. .	42. 0	26. 7	42. 3	28. 0	13. 3	16 29. 10	— 1. 16	15. 49	18 16 12. 45	+ 77. 93
		17	22. 0	7. 5	51. 0	36. 0	51. 7	29. 7	6. 0	20. 3	4. 5	49. 7	35. 5					
	51 (Hev.) Cephei . .	18	. .	. .	. .	17. 0	36. 5	52. 7	11. 7	30. 5	. .	. .	. .	35 53. 68	+ 1. 13	15. 49	6 35 39. 32	— 120. 73
	α Canis Majoris . .	19	22. 3	23. 3	24. 2	25. 0	25. 9	. .	44. 2	47. 0	48. 0	49. 0	49. 8	39 35. 87	— 11. 68	15. 50	6 39 8. 69	10. 03
	Lacaille 2461 . .	†20	23. 0	23. 9	24. 8	27. 9	28. 9	. .	0. 5	1. 6	4. 5	5. 4	6. 3	44 14. 68	+ 0. 06	15. 50	6 43 59. 24	9. 54
	Lacaille 2462 . .	†21	53. 5	54. 5	55. 5	56. 6	59. 5	20. 6	41. 4	44. 4	45. 4	46. 4	47. 4	44 20. 48	— 0. 02	15. 50	6 44 4. 96	9. 54
	* — 24° 17′ . .	22	50. 9	51. 9	52. 8	53. 9	57. 1	. .	38. 9	41. 7	42. 8	43. 7	44. 7	48 17. 84	0. 03	15. 50	6 48 2. 31	9. 54
	Lalande 13393 . .	23	. .	. .	. .	. .	. .	. .	54. 4	57. 3	58. 4	59. 3	0. 3	48 57. 94	— 24. 62	15. 50	6 48 17. 82	9. 56
	o¹ Canis Majoris . .	24	17. 7	18. 6	19. 6	20. 6	23. 5	. .	. .	. .	. .	. .	. .	48 20. 00	+ 24. 51	15. 50	6 48 29. 01	9. 57
	Lacaille 2543 . .	25	27. 6	28. 6	29. 7	30. 7	33. 6	55. 0	16. 6	19. 8	20. 7	21. 7	22. 6	52 55. 15	+ 0. 02	15. 50	6 52 39. 63	9. 33
	Lacaille 2570 . .	26	18. 7	19. 6	20. 6	21. 6	24. 6	45. 7	6. 9	10. 0	10. 9	11. 9	12. 8	55 45. 75	— 0. 01	15. 50	6 55 30. 24	9. 53
	Lacaille 2617 . .	27	29. 9	30. 9	31. 9	32. 9	35. 8	56. 6	17. 6	20. 6	21. 6	22. 5	23. 5	1 56. 71	0. 00	15. 50	7 1 41. 21	9. 71
	Lacaille 2647 . .	28	39. 3	40. 3	41. 3	42. 3	45. 3	6. 9	28. 4	31. 4	32. 6	33. 6	34. 6	5 6. 91	0. 00	15. 50	7 4 51. 41	9. 40
	Lacaille 2655 . .	29	24. 6	25. 7	26. 6	27. 6	30. 7	52. 2	13. 6	16. 8	17. 7	18. 8	19. 7	6 52. 18	0. 00	15. 50	7 6 36. 68	9. 43
	B. A. C. 2393 . .	30	34. 8	35. 8	36. 8	37. 7	38. 7	. .	58. 2	1. 2	2. 3	3. 3	4. 3	9 49. 31	12. 53	15. 50	7 9 21. 28	9. 48
	30 Canis Majoris . .	31	52. 4	53. 5	54. 4	55. 4	58. 4	19. 4	40. 4	43. 4	44. 5	45. 5	46. 4	13 19. 43	0. 00	15. 51	7 13 3. 92	9. 69
	Lacaille 2726 . .	32	22. 6	23. 7	24. 7	25. 7	28. 6	49. 7	10. 7	13. 7	14. 8	15. 8	16. 7	13 49. 70	0. 00	15. 51	7 13 34. 19	— 9. 69
	τ Draconis, S. P. . .	33	. .	. .	. .	28. 8	25. 5	22. 8	19. 7	16. 4	. .	. .	. .	18 22. 64	0. 03	15. 51	19 18 7. 10	+ 6. 62
	B. A. C. 2461 . .	34	17. 9	19. 0	20. 2	21. 2	24. 2	46. 6	9. 3	12. 4	13. 5	14. 4	15. 3	19 46. 73	0. 00	15. 51	7 19 31. 22	— 9. 14
	B. A. C. 2466 . .	35	18. 6	19. 7	22. 8	43. 2	44. 2	45. 2	46. 3	47. 3	7. 7	10. 9	11. 9	20 45. 25	0. 00	15. 51	7 20 29. 74	9. 15
	α² Geminorum . .	36	40. 7	41. 8	42. 8	43. 9	47. 1	9. 7	32. 3	35. 5	36. 7	37. 7	38. 7	26 9. 72	0. 01	15. 51	7 25 54. 20	— 14. 51
	λ Ursæ Minoris, S. P.	37	. .	. .	. .	36. 0	49. 0	6. 5	18. 0	32. 0	. .	. .	. .	0 4. 30	— 0. 45	15. 52	19 59 48. 33	+ 248. 12
27	δ Ursæ Minoris, S. P.	38	9. 0	23. 5	. .	52. 0	37. 5	. .	. .	. .	. .	. .	. .	10 15. 50	+ 6 15. 86	17. 76	18 16 13. 60	+ 77. 34
	Moon II	39	. .	. .	. .	15. 9	44. 8	5. 7	26. 7	55. 5	. .	. .	. .	26 5. 72	0. 00	17. 76	6 25 47. 96	. .
	γ Geminorum . . .	40	. .	. .	. .	20. 6	48. 1	8. 0	18. 1	55. 4	. .	. .	. .	30 8. 04	0. 00	17. 76	6 29 50. 28	— 12. 82
	51 (Hev.) Cephei . .	41	. .	. .	. .	19. 7	38. 5	. .	15. 0	. .	. .	. .	. .	35 44. 40	+ 12. 56	17. 77	6 35 39. 19	120. 09
	α Canis Majoris . .	42	. .	. .	. .	38. 9	6. 5	26. 4	46. 4	13. 8	. .		. .	39 26. 40	— 0. 01	17. 77	6 39 8. 62	10. 00
	ε Canis Majoris . .	43	. .	. .	. .	42. 4	12. 7	34. 3	56. 3	26. 2	. .	. .	. .	53 34. 38	0. 01	17. 77	6 53 16. 60	9. 14
	ζ Geminorum . . .	44	. .	. .	. .	30. 6	58. 8	19. 2	39. 9	7. 8	. .	. .	. .	55 19. 26	0. 00	17. 77	6 55 1. 49	13. 29
	δ Geminorum . . .	45	. .	. .	. .	27. 6	56. 2	16. 7	37. 5	5. 9	. .	. .	. .	12 16. 78	0. 00	17. 78	7 11 59. 00	13. 46
Mar. 1	68 Geminorum . . .	46	44. 4	45. 4	46. 3	47. 3	50. 0	9. 9	29. 8	32. 7	33. 7	34. 6	35. 5	26 9. 96	0. 04	20. 04	7 25 49. 88	12. 91
	α Canis Minoris . .	47	28. 5	29. 4	30. 3	31. 2	32. 1	. .	49. 5	52. 4	53. 3	54. 2	55. 0	32 41. 59	11. 27	20. 05	7 32 10. 27	11. 93
	g Geminorum . . .	48	8. 2	9. 2	10. 2	11. 1	14. 0	34. 1	54. 4	57. 3	58. 3	59. 2	0. 2	38 34. 20	0. 04	20. 05	7 38 14. 11	13. 16
	φ Geminorum . . .	49	2. 0	3. 0	3. 9	5. 0	8. 0	29. 5	51. 0	54. 1	55. 2	56. 1	57. 0	45 29. 53	0. 04	20. 06	7 45 9. 43	— 13. 94
	λ Ursæ Minoris, S. P.	50	. .	. .	. .	. .	. .	10. 0	. .	. .	. .	. .	. .	0 10. 00	0. 68	20. 07	19 59 49. 25	+ 245. 73
	ρ Argus	51	38. 3	39. 3	40. 3	41. 3	44. 2	5. 1	26. 1	29. 2	30. 1	31. 0	32. 0	2 5. 17	0. 03	20. 07	8 1 45. 07	— 10. 08
	Moon I . . .	†52	22. 1	23. 1	24. 0	26. 9	27. 9	. .	57. 0	57. 9	0. 7	1. 6	2. 6	8 12. 45	0. 00	20. 00	8 7 52. 37	. .
		53	46. 4	47. 4	48. 3	49. 3	52. 2	12. 4	32. 9	35. 8	36. 6	37. 7	38. 6					
	w Puppis	54	52. 8	53. 9	55. 0	56. 1	59. 3	22. 0	44. 7	47. 9	49. 0	50. 1	51. 1	16 21. 99	— 0. 03	—20. 08	8 16 1. 88	— 9. 57

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Feb. 25, 4. 5	— 15. 45	— 0. 021	— 0. 004
27, 6. 8	17. 77	0. 021	0. 004
Mar. 1, 7. 8	— 20. 06	— 0. 048	— 0. 030

8. Fine observation.
10. Very faint and uncertain.
13. Good observation.
20. Following of double distance 35″.
21. South of double distance 30″.
52. Limb jagged.

February 25, 22h. to 7h. n. = + 0. 035 s.
7h. to 8h. — 0. 010.
27 . . . . + 0. 010.
March 1, 7h. to 9h. — 0. 015.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 1	Lacaille 3302	1	27. 4	28. 5	29. 5	30. 5	33. 9	56. 4	19. 2	22. 4	23. 5	24. 4	25. 5	18 56. 47	— 0. 03	—20. 08	8 18 36. 36	— 9. 61
	B. A. C. 2843	2	. .	. .	. .	6. 7	7. 8	8. 7	9. 8	10. 8	. .	. .	. .	22 8. 76	0. 00	20. 09	8 21 48. 67	9. 75
	θ Cancri	3	44. 0	44. 9	45. 9	46. 8	49. 7	9. 8	30. 1	32. 9	33. 9	34. 8	35. 7	24 9. 86	0. 04	20. 09	8 23 49. 73	13. 14
	Mercury II	4	28. 7	29. 7	30. 7	31. 6	34. 4	54. 4	14. 2	17. 2	18. 1	19. 1	20. 0	9 54. 37	— 0. 01	20. 74	21 9 33. 62	. .
	α Cephei	5	45. 2	47. 1	49. 1	51. 1	56. 6	37. 1	18. 3	24. 0	26. 1	28. 0	29. 8	15 37. 49	+ 0. 05	20. 75	21 15 16. 79	2. 77
	β Aquarii	6	. .	. .	. .	. .	. .	. .	24. 0	25. 0	27. 6	28. 4	29. 4	25 26. 88	— 45. 00	20. 75	21 24 21. 13	— 9. 90
	β Cephei	7	. .	. .	. .	5. 3	8. 2	10. 7	13. 3	15. 9	. .	. .	.	27 10. 68	+ 0. 15	20. 75	21 26 50. 08	+ 0. 33
2	Sun I	8	13. 7	14. 5	15. 5	16. 4	19. 2	38. 5	57. 9	0. 6	1. 5	2. 4	3. 3	51 38. 50	— 0. 04	20. 81	22 51 17. 65	. .
	Sun II	9	24. 3	25. 2	26. 0	27. 0	29. 7	49. 0	8. 3	11. 1	12. 2	13. 0	13. 9	53 49. 06	0. 04	20. 81	22 53 28. 21	. .
	α Andromedæ	10	11. 9	13. 0	14. 0	14. 9	18. 1	39. 7	1. 6	4. 8	5. 7	6. 8	7. 8	1 39. 85	0. 00	20. 86	0 1 18. 99	— 9. 57
	Venus I	11	17. 7	18. 6	19. 7	20. 6	23. 1	42. 4	1. 6	4. 4	5. 3	6. 1	7. 0	6 42. 41	0. 03	20. 87	0 6 21. 51	+ 0. 36
	β Ceti	12	38. 2	39. 0	40. 0	41. 0	43. 8	3. 9	24. 2	27. 1	28. 1	29. 0	29. 9	37 4. 02	— 0. 05	20. 89	0 36 43. 08	— 9. 35
	Polaris	13	. .	. .	. .	42. 0	18. 5	52. 0	29. 0	6. 0	. .	. .	. .	9 53. 50	+ 2. 11	20. 91	1 9 34. 70	32. 24
	η Piscium	14	5. 6	6. 6	7. 6	8. 5	11. 3	31. 0	50. 8	53. 7	54. 6	55. 5	56. 4	24 31. 05	— 0. 01	20. 92	1 24 10. 12	10. 28
	α Aurigæ	15	55. 4	56. 6	57. 7	59. 0	0. 4	. .	25. 4	29. 3	30. 5	31. 8	33. 0	7 13. 91	16. 08	21. 08	5 6 36. 75	15. 75
	Lacaille 1787	16	42. 3	43. 2	44. 4	45. 5	48. 7	10. 9	33. 4	36. 6	37. 7	38. 7	39. 8	12 11. 02	0. 05	21. 08	5 11 49. 89	8. 16
	B. A. C. 1655	17	16. 5	17. 5	18. 6	19. 6	20. 6	. .	40. 2	43. 2	44. 4	45. 4	46. 3	14 31. 23	12. 66	21. 08	5 13 57. 49	8. 58
	β Tauri	18	33. 3	34. 4	35. 4	36. 5	39. 4	1. 2	23. 0	26. 2	27. 2	28. 3	29. 2	18 1. 28	0. 02	21. 08	5 17 40. 18	13. 54
	δ Orionis	19	. .	. .	. .	21. 6	22. 6	23. 4	24. 4	25. 1	. .	. .	. .	25 23. 42	0. 01	21. 09	5 25 2. 32	10. 98
	B. A. C. 1761	20	. .	. .	. .	56. 0	57. 0	58. 0	59. 0	0. 0	. .	. .	. .	28 58. 00	0. 02	21. 09	5 28 36. 89	8. 39
	Lacaille 1913	21	7. 6	8. 7	9. 6	10. 7	13. 7	35. 0	56. 6	59. 6	0. 6	1. 5	2. 5	32 35. 10	0. 05	21. 09	5 32 13. 96	8. 74
	B. A. C. 1812	22	52. 5	53. 5	54. 5	55. 6	58. 7	20. 9	43. 2	46. 4	47. 5	48. 5	49. 5	37 20. 98	0. 05	21. 10	5 36 59. 83	8. 36
	Lacaille 1977	23	58. 7	59. 8	1. 9	5. 2	26. 7	27. 7	28. 7	50. 0	53. 3	55. 5	56. 6	40 27. 65	— 0. 04	21. 10	5 40 6. 51	8. 26
	* + 71° 35′	24	. .	. .	. .	57. 6	0. 6	3. 2	6. 3	9. 0	. .	. .	. .	43 3. 34	+ 0. 06	21. 10	5 42 42. 30	25. 96
	O. Arg. N. 6250	25	. .	. .	. .	. .	. .	. .	18. 6	21. 7	29. 9	32. 7	35. 3	45 27. 64	— 2 21. 02	21. 10	5 42 45. 52	25. 90
	B. A. C. 1894	26	. .	. .	. .	16. 2	17. 0	18. 1	19. 1	20. 2	. .	. .	. .	49 18. 12	0. 02	21. 11	5 48 56. 99	8. 59
	O. Arg. N. 6390	27	52. 3	55. 8	58. 7	1. 5	10. 3	13. 2	16. 2	25. 5	28. 4	31. 3	34. 1	52 13. 39	— 0. 02	21. 11	5 51 52. 26	26. 78
	* + 73° 33′	28	. .	. .	. .	13. 4	17. 0	19. 7	22. 9	25. 8	. .	. .	.	57 19. 76	+ 0. 06	21. 11	5 56 58. 71	28. 15
	* 116, W.	29	. .	. .	. .	28. 7	31. 9	34. 8	38. 2	41. 1	. .	. .	. .	58 34. 94	+ 0. 06	21. 11	5 58 13. 89	28. 21
	22 Cameleopardi	30	0. 8	3. 4	6. 0	8. 4	16. 0	10. 3	4. 8	12. 6	15. 1	17. 7	20. 0	4 10. 46	— 0. 02	21. 12	6 3 49. 32	24. 51
	* — 27° 42′	31	11. 2	12. 1	13. 2	14. 2	17. 3	. .	0. 5	3. 6	4. 6	5. 5	6. 5	7 38. 87	0. 06	21. 12	6 7 17. 69	8. 85
	* — 27° 43′	32	. .	. .	. .	38. 3	39. 3	40. 3	41. 2	42. 2	. .	. .	. .	7 40. 26	0. 02	21. 12	6 7 19. 12	8. 85
	* — 27° 42′	33	25. 2	26. 2	27. 2	28. 3	51. 9	52. 9	53. 9	17. 7	18. 7	19. 7	20. 7	7 52. 96	0. 05	21. 12	6 7 31. 79	8. 85
	Lacaille 2219	34	15. 7	16. 6	17. 7	18. 7	21. 6	42. 6	3. 8	6. 8	7. 8	8. 8	9. 8	13 42. 72	0. 05	21. 12	6 13 21. 55	9. 15
	Lacaille 2220	35	35. 2	36. 3	37. 3	38. 2	41. 1	2. 3	23. 5	26. 4	27. 4	28. 4	29. 4	14 2. 32	0. 05	21. 12	6 13 41. 15	— 9. 16
	δ Ursæ Minoris, S. P.	36	. .	. .	. .	5. 0	49. 5	35. 7	20. 5	6. 0	. .	. .	. .	16 35. 34	0. 56	21. 12	18 16 13. 66	+ 76. 31
	Lacaille 2271	37	. .	. .	. .	44. 1	45. 3	46. 2	47. 2	48. 2	. .	. .	. .	20 46. 20	0. 02	21. 13	6 20 25. 05	— 8. 74
	Lacaille 2288	38	33. 2	34. 3	35. 3	36. 3	39. 3	0. 8	22. 3	25. 3	26. 4	27. 4	28. 4	23 0. 82	0. 05	21. 13	6 22 39. 64	9. 01
	Lacaille 2306	39	. .	. .	. .	10. 4	11. 4	12. 4	13. 4	14. 5	. .	. .	. .	25 12. 42	0. 02	21. 13	6 24 51. 27	8. 62
	Lacaille 2355	40	45. 0	46. 2	49. 2	9. 0	10. 0	10. 9	11. 9	13. 0	32. 8	35. 9	37. 0	31 10. 99	0. 05	21. 13	6 30 49. 81	8. 91
	Lacaille 2366	41	.	39. 4	42. 5	2. 3	3. 4	4. 3	5. 3	6. 4	26. 2	29. 3	. .	32 4. 34	0. 04	21. 14	6 31 43. 16	8. 93
	Lacaille 2392	42	5. 4	6. 5	7. 5	8. 5	11. 5	33. 2	55. 0	58. 1	59. 1	0. 1	1. 0	35 33. 26	0. 05	21. 14	6 35 12. 07	9. 00
	Lacaille 2413	43	41. 1	42. 1	43. 2	44. 4	47. 3	8. 9	30. 7	33. 8	34. 9	35. 9	36. 9	38 9. 02	0. 05	21. 14	6 37 47. 83	9. 01
	Lacaille 2454	44	7. 7	8. 6	9. 6	10. 7	13. 7	35. 4	57. 2	0. 3	1. 3	2. 3	3. 1	43 35. 45	0. 05	21. 14	6 43 14. 26	9. 07
	O. Arg. S. 5809	45	. .	. .	. .	26. 7	27. 7	28. 6	29. 7	30. 6	. .	. .	. .	46 28. 66	0. 02	21. 14	6 46 7. 50	9. 25
	O. Arg. S. 5814	46	. .	. .	. .	38. 7	39. 7	40. 6	41. 7	42. 7	. .	. .	. .	46 40. 68	0. 02	21. 15	6 46 19. 51	9. 24
	Lacaille 2524	47	37. 3	40. 3	41. 4	42. 4	43. 4	. .	3. 2	4. 2	7. 1	8. 2	9. 2	50 53. 67	38. 35	21. 15	6 49 54. 17	9. 05
	Lacaille 2543	48	. .	. .	. .	58. 5	59. 6	0. 6	1. 6	2. 5	. .	. .	. .	53 0. 56	0. 02	21. 15	6 52 39. 39	9. 25
	Lacaille 2570	49	24. 3	25. 3	26. 2	27. 2	30. 1	51. 3	12. 3	15. 4	16. 4	17. 3	18. 4	55 51. 29	0. 05	21. 15	6 55 30. 09	9. 44
	γ Canis Majoris	50	33. 3	34. 2	37. 0	54. 9	55. 9	56. 9	57. 7	58. 7	16. 8	19. 6	20. 4	57 56. 85	0. 04	21. 15	6 57 35. 66	10. 29
	26 Canis Majoris	51	31. 8	33. 0	34. 0	35. 0	37. 8	59. 0	20. 5	23. 4	24. 4	25. 5	26. 4	6 59. 16	0. 05	21. 16	7 6 37. 95	9. 47
	B. A. C. 2394	52	. .	. .	. .	40. 6	41. 6	42. 6	43. 5	44. 6	. .	. .	. .	9 42. 58	0. 02	21. 16	7 9 21. 40	9. 06
	B. A. C. 2399	53	57. 8	58. 8	59. 9	1. 0	4. 1	26. 2	48. 5	51. 6	52. 5	53. 8	54. 8	10 26. 27	0. 05	21. 16	7 10 5. 06	9. 06
	δ Geminorum	54	18. 2	19. 2	20. 1	21. 1	22. 0	. .	40. 8	43. 7	44. 8	45. 7	46. 6	12 32. 22	12. 11	21. 16	7 11 58. 95	13. 42
	Lacaille 2747	55	. .	. .	. .	42. 5	43. 5	44. 6	45. 6	46. 6	. .	. .	. .	— 15 44. 56	— 0. 02	—21. 17	7 15 23. 37	— 9. 46

March 1-2, 21h. to 2h. n. = + 0.060 s.
2, 5h. to 9h. + 0.025.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 2, 4.5	— 21.05	— 0.042	— 0.030

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Mar. 2	s Puppis	1	40.8	41.9	43.0	44.1	47.3	9.6	32.2	35.3	36.4	37.5	38.5	18 9.69	— 0.05	—21.17	— 7 17 48.47	— 9.02
	Lacaille 2797	2	..	..	..	19.3	20.4	21.3	22.4	23.3	..	..	..	20 21.34	0.02	21.17	7 20 0.15	9.53
	Lacaille 2814	3	15.6	16.8	17.8	18.8	21.9	43.5	5.2	8.3	9.4	10.4	11.3	22 43.55	— 0.05	21.17	7 22 22.33	9.39
N.	β Geminorum	4	51.9	52.9	54.0	55.0	58.0	..	..	..	..	..	..	36 54.36	+ 25.42	21.18	7 36 58.60	13.92
	η Cancri	5	20.3	21.3	22.2	25.0	26.1	..	44.7	45.7	46.7	47.7	50.5	24 35.02	+ 35.97	21.21	8 24 49.78	13.30
	δ Cancri	6	51.9	52.9	53.8	54.8	57.6	17.8	38.0	40.9	41.9	42.8	43.7	37 17.83	— 0.02	21.22	8 36 56.59	13.12
	O. Arg. S. 8978	7	48.0	49.0	50.1	51.1	54.3	..	38.1	41.2	42.3	43.4	44.4	41 16.19	0.06	21.23	8 40 54.90	10.09
	O. Arg. S. 8979	8	..	..	..	15.3	16.3	17.4	18.4	19.4	..	..	..	41 17.36	0.02	21.23	8 40 56.11	10.09
	* — 32° 21′	9	..	..	..	33.8	34.7	35.7	36.7	37.7	..	..	..	44 35.72	0.02	21.23	8 44 14.47	9.93
	B. A. C. 3006	10	12.4	13.4	14.5	15.5	18.8	41.3	4.0	7.2	8.4	9.4	10.5	44 41.40	— 0.05	21.23	8 44 20.12	9.92
	Moon I	†11	55.6	56.6	57.5	0.2	1.3	..	28.8	29.7	32.5	33.4	34.3	57 45.03	+ 0.02	21.24	8 57 23.81	..
		†12	19.4	20.4	21.3	22.3	25.1	45.1	5.0	7.9	8.9	9.7	10.7					
	κ Cancri	13	..	41.6	42.6	43.5	44.4	45.3	..	5.7	6.8	7.6	8.6	0 54.01	— 10.54	21.24	9 0 22.23	12.58
Y.	α Cephei	†14	46.1	48.2	50.1	52.0	57.7	38.1	19.4	25.0	27.0	28.9	30.8	15 38.48	..	..	.. .. ..	— 2.79
	β Cephei	†15	0.0	2.6	5.2	7.8	15.7	11.3	7.4	15.7	18.2	20.7	23.2	27 11.62	..	..	.. .. ..	+ 0.30
3	β Geminorum	16	52.7	53.7	54.7	55.7	58.9	20.5	42.3	45.3	46.3	47.4	48.4	37 20.54	— 0.10	21.95	7 36 58.49	— 13.90
	Lalande 3061	17	24.5	25.5	26.6	27.5	30.7	53.0	15.5	18.7	19.7	20.7	21.6	49 53.09	+ 0.04	21.96	7 49 31.17	9.37
	Lalande 3078	18	13.3	14.4	15.5	16.6	17.7	..	38.6	41.9	42.9	44.0	45.0	52 28.99	— 13.45	21.96	7 51 53.58	— 9.15
	λ Ursæ Minoris, S. P.	19	..	..	..	35.0	50.0	5.0	20.0	33.0	..	..	..	0 4.60	+ 6.34	21.96	19 59 48.98	+ 244.44
	Lacaille 3209	20	7.3	8.2	9.3	10.3	13.6	35.8	58.4	1.6	2.5	3.6	4.6	8 35.93	0.04	21.97	8 8 14.00	— 9.56
	Lacaille 3248	21	0.6	1.6	2.7	3.6	6.9	29.5	52.1	55.7	56.5	57.5	58.5	12 29.56	0.04	21.97	8 12 7.63	9.52
	Weisse 381	22	35.4	36.3	37.4	38.3	40.9	0.5	20.0	22.9	23.8	24.8	25.7	16 0.55	0.00	21 97	8 15 38.58	12.67
	Lacaille 3312	23	37.5	38.6	39.6	40.6	43.8	6.2	28.8	32.1	33.1	34.0	35.1	20 6.31	0.04	21.98	8 19 44.37	9.68
	Lacaille 3331	24	3.8	4.9	5.9	7.0	10.2	32.6	55.1	58.3	59.3	0.3	1.4	22 32.62	0.04	21.98	8 22 10.68	9.70
	Lacaille 3361	25	11.4	12.4	13.4	14.5	17.8	40.0	2.3	5.3	6.4	7.5	8.5	25 39.95	0.03	21.98	8 25 18.00	9.80
	Lacaille 3399	26	58.1	59.2	0.3	1.3	4.5	27.0	49.7	53.0	54.0	54.9	56.1	29 27.10	0.04	21.98	8 29 5.16	9.74
	Lacaille 3434	27	58.6	59.8	0.9	2.0	5.2	28.0	51.0	54.2	55.3	56.4	57.4	32 28.07	0.04	21.98	8 32 6.13	9.69
	Lacaille 3459	28	..	..	..	46.1	47.3	48.3	49.4	50.4	..	..	..	34 48.30	0.07	21.99	8 34 26.38	9.70
	* — 33° 31′	29	31.7	32.9	33.9	35.0	38.1	1.2	24.2	27.5	28.7	29.6	30.8	35 1.24	+ 0.04	21.99	8 34 39.29	9.70
	ε Hydræ	30	31.0	32.0	33.0	33.8	36.7	55.9	15.2	17.8	18.9	19.7	20.6	39 55.87	— 0.04	21.99	8 39 33.84	12.27
	Lacaille 3546	31	44.5	45.5	46.5	47.6	50.8	13.0	35.2	38.3	39.3	40.3	41.3	44 12.94	+ 0.03	21.99	8 43 50.98	10.03
	Lacaille 3574	32	46.2	47.3	48.3	49.4	52.6	..	13.0	14.0	15.0	16.2	17.1	47 1.91	+ 13.25	21.99	8 46 53.17	9.95
	* — 32° 4′	33	36.3	37.2	38.2	39.3	40.2	..	0.8	4.2	5.2	6.2	7.2	47 51.48	— 13.16	21.99	8 47 16.33	9.96
	Lacaille 3595	34	14.1	15.0	16.1	17.1	18.1	..	38.9	42.2	43.2	44.3	45.1	50 29.41	— 13.28	21.99	8 49 54.14	9.95
	Lacaille 3617	35	3.2	4.2	5.3	6.4	9.7	31.8	54.3	57.7	58.7	59.8	0.7	53 31.98	+ 0.04	22.00	8 53 10.02	10.07
	Lacaille 3656	36	8.2	9.2	10.2	11.2	14.5	37.0	59.6	2.8	3.8	4.8	5.9	57 37.02	+ 0.04	22.00	8 57 15.06	10.09
	κ Cancri	37	19.3	20.2	21.1	22.0	24.8	44.3	3.8	6.6	7.5	8.5	9.3	0 44.31	— 0.05	22.00	9 0 22.26	12.57
	Lacaille 3733	38	33.6	34.7	35.6	36.7	40.0	2.5	25.0	28.3	29.4	30.5	31.5	9 2.53	+ 0.04	22.01	9 8 40.56	10.23
	B. A. C. 3174	39	28.2	29.4	30.5	31.5	35.0	59.5	24.1	27.8	28.9	30.0	31.1	11 59.64	0.05	22.01	9 11 37.68	9.84
	1 (Hev.) Draconis	40	56.1	2.5	9.1	15.9	34.5	..	37.8	44.5	50.3	57.2	3.2	16 31.11	+ 1 18.74	22.01	9 17 27.84	39.85
	ω Leonis	41	7.1	8.0	9.0	9.8	12.7	31.9	51.5	54.2	55.0	56.0	56.8	21 32.00	— 0.05	22.01	9 21 9.94	12.48
	Lacaille 3889	42	45.0	45.9	47.0	48.1	51.5	14.8	38.3	41.7	42.8	43.7	44.8	26 14.87	+ 0.05	22.02	9 25 52.90	10.27
	Lacaille 3918	43	25.0	26.1	27.2	28.3	31.6	54.8	18.4	21.7	22.8	23.9	24.9	29 54.97	0.05	22.02	9 29 33.00	10.32
	Lacaille 3967	44	15.5	16.6	17.7	18.8	21.9	44.0	6.2	9.5	10.5	11.5	12.5	34 44.06	0.03	22.02	9 34 22.07	10.63
	* — 34° 58′	45	37.9	38.9	40.0	41.0	44.3	..	31.0	34.5	35.5	36.5	37.6	37 7.72	0.04	22.02	9 36 45.74	10.43
	Lacaille 3983	46	49.5	50.7	51.9	52.7	56.2	19.5	42.9	46.3	47.3	48.4	49.4	37 19.53	0.05	22.02	9 36 57.56	10.44
	Lacaille 4007	47	18.2	19.2	20.3	21.3	24.6	47.4	10.2	13.5	14.5	15.5	16.6	40 47.39	+ 0.04	22.03	9 40 25.40	10.58
	Moon I	48	11.4	12.4	13.3	14.2	16.9	36.6	56.4	59.3	0.2	1.0	2.0	46 36.70	— 0.05	22.03	9 46 14.62	..
	ν Leonis	49	50.9	51.8	52.7	53.7	56.4	16.0	35.6	38.5	39.4	40.3	41.1	51 16.04	0.06	22.03	9 50 53.95	12.60
	π Leonis	50	58.4	59.3	0.1	1.0	3.8	23.2	42.6	45.4	46.3	47.2	48.0	53 23.21	— 0.05	22.03	9 53 1.13	12.38
	Lacaille 4111	51	57.3	58.4	59 4	0.5	3.8	26.7	49.8	53.0	54.0	55.0	56.1	56 26.73	+ 0.04	22.04	9 56 4.73	10.76
	A Leonis	52	38.0	38.9	39.7	40.7	43.4	2.9	22.3	25.1	26.1	27.0	27.8	1 2.90	— 0.05	22.04	10 0 40.81	12.47
	Lalande 19854	53	27.1	28.2	29.3	38.3	33.5	56.1	18.8	22.1	23.2	24.2	25.2	5 56.18	+ 0.04	22.04	10 5 34.18	13.59
	22 Leonis Minoris	54	10.1	11.1	12.2	13.3	16.5	39.1	1.7	4.9	6.0	7.0	8.0	7 39.08	+ 0.04	22.04	10 7 17.08	13.57
	B. Z. 501, 29	55	41.1	42.2	43.1	44.3	47.4	9.7	32.2	35.3	36.4	37.5	38.5	11 9.79	— 0.11	—22.05	10 10 47.63	— 13.48

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 3, 9.5	— 22.02	— 0.038	— 0.030

11–12. Limb somewhat irregular.
14–15. For α and β Cephei no reliable n.

March 3, 11h. 15m. Image east $\overset{r.}{0.13}$. Clamp west.

4, On commencing observations the outside wires of A and B were found joined together in the middle, so as to prevent the use of those sets. They were separated by the mechanist next morning, but did not seem to resume their original positions accurately.

March 3, n. = $-\overset{s.}{0.115}$.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 3	Lacaille 4257 . .	1	55.4	56.4	57.4	58.3	1.3	22.3	43.5	46.5	47.5	48.5	49.4	15 22.41	+ 0.02	−22.05	10 15 0.38	− 11.28
	γ Antliæ	2	34.7	35.8	36.8	37.8	40.8	2.7	24.7	27.8	28.8	29.8	30.8	18 2.77	0.03	22.05	10 17 40.75	11.18
	α Antliæ	3	49.7	50.8	51.9	52.8	56.0	18.1	40.5	43.6	44.6	45.6	46.6	21 18.20	0.03	22.05	10 20 56.18	11.18
.	Lacaille 4317 . .	4	24.1	25.0	26.0	27.0	30.0	51.3	12.5	15.7	16.7	17.6	18.6	24 51.32	0.02	22.05	10 24 29.29	11.35
	Lacaille 4340 . .	5	23.7	24.6	25.7	26.7	29.7	. .	49.2	50.2	51.1	52.0	53.0	27 38.59	12.57	22.06	10 27 29.10	11.35
	Lacaille 4382 . .	6	37.4	38.4	39.5	40.4	43.6	4.5	25.9	28.8	29.9	30.7	31.7	33 4.62	0.02	22.06	10 32 42.58	11.44
	Lacaille 4406 . .	7	20.3	21.1	22.2	23.2	26.1	47.2	8.4	11.5	12.5	13.5	14.5	35 47.32	+ 0.02	22.06	10 35 25.28	11.46
	l Leonis	8	3.2	4.2	5.1	6.0	8.7	28.3	47.8	50.7	51.6	52.5	53.3	42 28.31	− 0.05	22.07	10 42 6.19	12.36
	Weisse 803 . . .	9	46.6	47.6	48.5	49.4	52.2	11.7	31.4	34.2	35.1	36.0	36.9	45 11.78	0.06	22.07	10 44 49.65	12.38
	O. Arg. N. 11279 .	10	29.1	30.8	32.7	34.5	40.0	18.2	56.6	2.0	4.0	5.6	7.4	50 18.26	− 0.26	22.07	10 49 55.93	15.58
	Lacaille 4570 . .	†11	38.2	39.2	40.3	41.1	44.2	5.5	27.0	30.1	31.1	32.2	33.0	57 5.63	+ 0.03	22.08	10 56 43.58	11.64
	χ Leonis	12	41.3	44.0	45.0	45.8	46.8	. .	4.3	5.2	7.9	8.7	9.6	58 55.86	− 33.93	22.08	10 57 59.85	12.15
4	ε Orionis	13	. .	. .	. .	38.8	39.7	40.5	41.4	42.3	. .	. .	. .	29 40.54	0.01	22.92	5 29 17.61	10.90
	O. Arg. N. 6082 .	14	. .	. .	. .	26.2	28.4	30.7	33.4	36.0	. .	. .	. .	32 30.94	0.02	22.92	5 32 8.00	24.49
	B. A. C. 1812 . .	15	45.2	48.2	49.3	50.3	51.5	. .	11.5	12.5	15.6	16.6	17.7	38 1.84	39.02	22.92	5 36 59.90	8.32
	Lacaille 1977 . .	16	. .	. .	. .	27.2	28.4	29.4	30.4	31.5	. .	. .	. .	40 29.38	0.01	22.92	5 40 6.45	8.22
	O. Arg. N. 6250 .	17	. .	. .	. .	2.6	5.5	8.2	11.2	13.7	. .	. .	. .	43 8.24	0.01	22.93	5 42 45.30	25.77
	ν Orionis	18	. .	. .	. .	8.3	9.2	10.1	11.0	11.8	. .	. .	. .	0 10.08	0.01	22.94	5 59 47.13	12.43
	Lacaille 2163 . .	19	. .	. .	. .	41.6	42.6	43.6	44.7	45.7	. .	. .	. .	4 43.66	0.01	22.94	6 4 20.71	8.44
	* — 27° 42′ . .	20	. .	. .	. .	38.6	39.6	40.5	41.5	42.7	. .	. .	. .	7 40.58	0.00	22.94	6 7 17.64	8.81
	* — 27° 42′ . .	21	. .	. .	. .	52.7	53.9	54.8	55.8	56.7	. .	. .	. .	7 54.78	0.00	22.94	6 7 31.84	8.81
	B. A. C. 2027 . .	22	. .	. .	. .	3.3	4.4	5.3	6.4	7.4	. .	. .	. .	11 5.34	0.00	22.94	6 10 42.40	8.62
	Lacaille 2226 . .	23	. .	. .	. .	17.2	18.2	19.0	20.0	21.0	. .	. .	. .	15 19.04	− 0.01	22.95	6 14 56.08	− 9.26
	δ Ursæ Minoris, S. P.	24	. .	. .	. .	7.0	52.0	39.0	22.3	8.0	. .	. .	. .	16 37.66	+ 0.11	22.95	18 16 14.82	+ 75.74
	Lacaille 2262 . .	25	. .	. .	. .	47.2	48.2	49.3	50.4	51.4	. .	. .	. .	19 49.30	0.00	22.95	6 19 26.35	− 8.79
	Lacaille 2288 . .	26	. .	. .	. .	0.6	1.7	2.6	3.7	4.7	. .	. .	. .	23 2.66	0.00	22.95	6 22 39.71	8.97
	ξ^1 Canis Majoris . .	27	. .	. .	. .	31.8	32.7	33.7	34.7	35.6	. .	. .	. .	26 33.70	− 0.01	22.95	6 26 10.74	9.35
	ζ Geminorum . . .	28	. .	. .	. .	11.3	12.2	13.1	14.1	15.0	. .	. .	. .	30 13.14	0.01	22.95	6 29 50.18	12.75
	Lacaille 2370 . .	29	. .	. .	. .	3.6	4.6	5.5	6.5	7.5	. .	. .	. .	33 5.54	0.01	22.96	6 32 42.57	9.39
	51 Cephei	30	. .	. .	. .	23.0	43.0	0.5	19.0	36.5	. .	. .	. .	36 0.40	0.15	22.96	6 35 37.29	118.27
	Lacaille 2420 . .	31	. .	. .	. .	49.4	50.4	51.3	52.4	53.4	. .	. .	. .	38 51.38	0.00	22.96	6 38 28.42	9.05
	Lacaille 2427 . .	32	. .	. .	. .	46.8	47.8	48.7	49.8	50.9	. .	. .	. .	39 48.80	0.00	22.96	6 39 25.84	9.08
	* — 27° 15′ . .	33	. .	. .	. .	. .	. .	. .	52.9	55.9	57.0	58.0	59.1	44 56.58	25.23	22.96	6 44 8.39	9.12
	B. A. C. 2244 . .	34	. .	. .	. .	0.2	1.3	2.2	3.3	4.3	. .	. .	. .	45 2.26	0.00	22.96	6 44 39.30	9.13
	Lacaille 2507 . .	35	. .	. .	. .	54.1	55.0	56.1	56.9	58.0	. .	. .	. .	48 56.02	0.01	22.96	6 48 33.05	9.47
	* — 24° 48′ . .	36	38.4	39.3	40.2	41.2	42.2	. .	1.4	4.3	5.4	6.3	7.3	51 52.60	− 12.35	22.97	6 51 17.28	9.49
	Lacaille 2560 . .	37	. .	. .	. .	42.0	43.2	44.2	45.2	46.1	. .	. .	. .	54 44.14	0.00	22.97	6 54 21.17	9.11
	Lacaille 2571 . .	38	. .	. .	. .	40.4	41.5	42.5	43.6	44.6	. .	. .	. .	55 42.52	0.00	22.97	6 55 19.55	− 9.11
	λ Ursæ Minoris, S. P.	39	. .	. .	. .	45.0	57.5	14.0	25.0	40.0	. .	. .	. .	0 12.30	+ 0.36	23.01	19 59 49.65	+ 243.77
	ε Hydræ	40	16.3	18.7	19.8	20.8	21.7	. .	39.0	40.0	42.5	43.6	44.4	40 30.68	− 33.82	23.03	8 39 33.83	− 12.27
	* — 32° 23′ . .	41	35.4	36.4	37.5	38.6	39.6	. .	0.2	3.3	4.5	5.7	6.9	44 50.81	13.29	23.03	8 44 14.49	9.89
	B. A. C. 3006 . .	42	. .	. .	. .	41.1	42.2	43.1	44.2	45.3	. .	. .	. .	44 43.18	0.01	23.03	8 44 20.14	9.90
	* — 34° 56′ . .	43	. .	. .	. .	20.7	21.8	22.8	23.9	24.9	. .	. .	. .	49 22.82	0.01	23.03	8 48 59.78	9.77
	* — 35° 2′ . . .	44	. .	. .	. .	43.2	44.4	45.4	46.5	47.6	. .	. .	. .	49 45.42	0.01	23.03	8 49 22.38	9.77
	* — 34° 50′ . .	45	. .	. .	. .	10.6	11.7	12.9	14.1	15.0	. .	. .	. .	54 12.86	0.01	23.04	8 53 49.81	9.84
	Lacaille 4186 . .	46	. .	. .	. .	27.4	28.5	29.8	31.0	32.0	. .	. .	. .	6 29.74	0.01	23.08	10 6 6.65	10.64
	* — 39° 58′ . .	47	. .	. .	.	28.3	29.5	30.6	31.9	33.0	. .	. .	. .	7 30.66	0.01	23.08	10 7 7.57	10.67
	γ Leonis	48	. .	. .	.	49.1	50.1	50.9	52.0	52.8	. .	. .	. .	12 50.98	0.01	23.08	10 12 27.89	12.93
	Lacaille 4257 . .	49	. .	. .	. .	21.5	22.4	23.3	24.4	25.3	. .	. .	. .	15 23.38	0.00	23.08	10 15 0.30	11.28
	α Antliæ . . .	50	. .	.	. .	17.1	18.2	19.1	20.3	21.1	. .	. .	. .	21 19.16	0.01	23.09	10 20 56.06	11.18
	Moon I	51	. .	. .	. .	. .	. .	. .	0.8	1.7	4.6	5.4	6.2	36 3.74	45.71	23.10	10 34 54.93	. .
	l Leonis	52	. .	. .	. .	27.4	28.4	29.3	30.1	30.9	. .	. .	. .	42 29.22	0.01	23.10	10 42 6.11	12.36
	c Leonis	53	. .	. .	. .	2.8	3.8	4.6	5.4	6.4	. .	. .	. .	54 4.60	0.01	23.11	10 53 41.48	12.21
	χ Leonis	54	. .	. .	. .	21.2	22.1	23.0	23.8	24.7	. .	. .	. .	58 22.96	0.01	23.11	10 57 59.84	12.15
	p^3 Leonis	55	. .	. .	. .	19.3	20.1	20.9	21.7	22.5	. .	. .	. .	0 20.90	− 0.01	−23.11	10 59 57.78	− 12.11

11. Nebulous.

March 4. n. = 0.000 s.

March 4, after 10h. Much troubled by the freezing of the ink in the chronograph pen. Several observations were thus lost.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 4, 8.4	− 23.02	− 0.035	− 0.030

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Mar. 5	Sun I	†1	26. 1	27. 0	28. 0	28. 8	31. 5	50. 7	10. 0	12. 8	13. 7	14. 6	15. 6	2 50. 80	— 0. 04	—23. 33	23 2 27. 43	. .
	Sun II	†2	36. 2	37. 2	38. 2	39. 0	41. 6	0. 9	20. 4	23. 3	24. 1	25. 0	25. 8	5 1. 06	— 0. 04	23. 33	23 4 37. 69	. .
	Polaris	†3	. .	. .	. .	42. 0	18. 0	56. 0	33. 0	7. 0	. .	. .	. .	8 55. 20	+ 1. 13	23. 43	1 8 32. 90	— 30. 47
Y.	*α* Arietis	4	25. 2	26. 1	27. 1	28. 1	30. 9	51. 7	12. 3	15. 4	16. 4	17. 4	18. 2	59 51. 71	— 0. 02	23. 46	1 59 28. 23	10. 95
	ν Orionis	†5	. .	. .	. .	21. 1	45. 1	10. 4	35. 7	59. 2	. .	. .	. .	0 10. 30	+ 0. 02	23. 12	5 59 47. 20	— 12. 42
	δ Ursæ Minoris, S. P.	†6	. .	. .	. .	7. 0	22. 0	37. 0	52. 0	8. 0	. .	. .	. .	16 37. 20	1. 11	23. 35	18 16 14. 96	+ 75. 38
	γ Geminorum	7	. .	. .	. .	24. 1	48. 1	13. 4	39. 1	2. 8	. .	. .	. .	30 13. 50	+ 0. 02	23. 36	6 29 50. 16	— 12. 73
	51 Cephei	8	. .	. .	. .	24. 0	43. 5	1. 5	20. 0	38. 0	. .	. .	. .	36 1. 40	— 1. 39	23. 36	6 35 36. 65	117. 80
	γ Canis Majoris	9	. .	. .	. .	9. 9	33. 7	58. 9	24. 6	48. 1	. .	. .	. .	57 59. 04	+ 0. 06	23. 37	6 57 35. 73	— 10. 24
	λ Ursæ Minoris, S. P.	10	. .	. .	. .	40. 0	22. 0	11. 0	56. 0	44. 0	. .	. .	. .	0 10. 60	3. 48	23. 41	19 59 50. 67	+ 242. 79
	ε Hydræ	11	. .	. .	. .	9. 5	32. 8	57. 2	22. 0	44. 8	. .	. .	. .	39 57. 26	0. 03	23. 44	8 39 33. 85	— 12. 26
	l Leonis	12	. .	. .	. .	41. 2	4. 7	29. 5	54. 5	17. 8	. .	. .	. .	42 29. 54	0. 03	23. 51	10 42 6. 06	13. 37
	c Leonis	†13	. .	. .	. .	17. 2	40. 3	5. 1	29. 8	52. 4	. .	. .	. .	54 4. 96	0. 03	23. 52	10 53 41. 47	12. 22
	*p*³ Leonis	14	. .	. .	. .	33. 7	56. 5	21. 0	45. 7	8. 3	. .	. .	. .	0 21. 04	0. 04	23. 30	10 59 57. 78	12. 12
	δ Leonis	15	. .	. .	. .	24. 4	49. 1	15. 2	41. 7	6. 0	. .	. .	. .	7 15. 28	0. 02	23. 30	11 6 52. 00	12. 56
	ε Leonis	16	. .	. .	. .	57. 6	20. 7	45. 0	9. 6	32. 3	. .	. .	. .	23 45. 04	0. 04	23. 31	11 23 21. 77	12. 03
	Moon II	17	. .	. .	. .	45. 2	9. 8	34. 0	58. 9	22. 0	. .	. .	. .	26 33. 98	0. 04	23. 31	11 26 10. 71	. .
	υ Leonis	18	. .	. .	. .	34. 9	58. 1	22. 2	46. 9	9. 4	. .	. .	. .	30 22. 30	+ 0. 04	23. 32	11 29 59. 02	12. 05
8	*ε* Pegasi	19	30. 6	31. 4	32. 4	33. 3	36. 0	55. 3	14. 8	17. 6	18. 5	19. 4	20. 3	37 55. 42	— 0. 03	27. 56	21 37 27. 83	9. 26
9	Sun I	20	18. 3	19. 2	20. 2	21. 1	23. 7	43. 0	2. 2	5. 0	5. 9	6. 8	7. 6	17 43. 00	0. 03	27. 62	23 17 15. 35	. .
	Sun II	21	28. 1	29. 0	30. 0	30. 7	33. 4	52. 7	12. 0	14. 7	15. 6	16. 5	17. 4	19 52. 74	0. 03	27. 62	23 19 25. 09	. .
N.	Polaris	22	. .	. .	. .	45. 5	23. 0	57. 0	34. 0	10. 0	. .	. .	. .	8 57. 90	0. 07	27. 69	1 8 30. 14	28. 81
	α Orionis	23	50. 5	51. 3	52. 3	53. 1	55. 9	15. 1	34. 5	37. 2	38. 2	39. 0	39. 9	48 15. 18	0. 03	27. 87	5 47 47. 28	11. 65
	B. A. C. 1946	24	46. 6	47. 5	48. 5	49. 5	52. 4	13. 8	35. 3	38. 3	39. 2	40. 2	41. 2	58 13. 86	0. 03	27. 88	5 57 45. 95	8. 78
	ν Orionis	25	49. 7	50. 5	51. 4	52. 4	55. 2	14. 9	34. 8	37. 5	38. 5	39. 4	40. 3	0 14. 96	— 0. 03	27. 88	5 59 47. 05	— 12. 34
	δ Ursæ Minoris, S. P.	26	. .	. .	. .	14. 5	59. 0	44. 5	29. 5	14. 5	. .	. .	. .	16 44. 40	+ 0. 03	27. 89	18 16 16. 54	+ 73. 88
	ε Canis Majoris	27	16. 5	17. 4	18. 5	19. 5	22. 5	44. 4	6. 2	9. 3	10. 3	11. 3	12. 3	53 44. 38	— 0. 03	27. 91	6 53 16. 44	— 8. 95
	*α*¹ Geminorum	28	25. 5	26. 7	27. 7	30. 9	32. 1	. .	11. 0	12. 2	15. 3	16. 3	17. 3	26 21. 50	+ 0. 06	27. 93	7 25 53. 63	14. 34
	*α*² Geminorum	29	53. 2	54. 2	55. 3	56. 3	59. 4	22. 0	44. 6	47. 8	48. 8	49. 9	51. 0	26 22. 05	— 0. 03	27. 93	7 25 54. 09	14. 30
	Lacaille 2876	30	32. 9	33. 8	34. 8	35. 8	38. 5	59. 7	20. 3	23. 5	24. 3	25. 4	26. 3	31 59. 57	0. 03	27. 93	7 31 31. 61	9. 75
	6 Cancri	31	9. 0	10. 0	11. 1	12. 1	15. 0	36. 7	58. 4	1. 5	2. 6	3. 5	4. 5	55 36. 76	— 0. 03	27. 95	7 55 8. 78	— 13. 90
	λ Ursæ Minoris, S. P.	32	. .	. .	. .	54. 0	5. 0	20. 0	35. 0	49. 0	. .	. .	. .	0 20. 60	+ 0. 10	27. 95	19 59 52. 75	+ 239. 34
11	Sun I	†33	41. 4	42. 2	43. 2	44. 0	46. 6	5. 8	25. 2	27. 8	28. 8	29. 7	30. 5	25 5. 93	— 0. 03	29. 24	23 24 36. 66	. .
	Sun II	†34	50. 9	51. 8	52. 6	53. 5	56. 2	15. 4	34. 6	37. 5	38. 3	39. 2	40. 1	27 15. 46	0. 03	29. 24	23 26 46. 19	. .
Y.	*α* Andromedæ	35	20. 6	21. 5	22. 5	23. 6	26. 6	48. 4	10. 2	13. 3	14. 3	15. 3	16. 3	1 48. 42	0. 01	29. 26	0 1 19. 15	— 9. 57
	Venus I	36	57. 7	58. 5	59. 5	0. 3	2. 9	22. 1	41. 5	44. 3	45. 1	46. 0	46. 8	47 22. 25	— 0. 03	29. 29	0 46 52. 93	+ 0. 37
	Polaris	37	28. 0	2. 0	41. 0	15. 0	4. 5	. .	56. 0	44. 0	22. 5	56. 5	32. 0	8 59. 23	+ 0. 44	29. 30	1 8 30. 37	— 28. 25
		38	. .	. .	. .	48. 0	23. 0	57. 0	32. 5	7. 0	. .	. .	. .					
	α Arietis	39	6. 0	6. 9	7. 8	10. 9	11. 9	. .	30. 8	31. 8	32. 8	33. 7	. .	59 19. 18	+ 38. 21	29. 33	1 59 28. 06	— 10. 88
	λ Ursæ Minoris, S. P.	†40	. .	. .	. .	. .	. .	. .	35. 0	52. 5	1. 0	15. 5	58. 5	19 44. 50	— 19 19. 12	29. 53	19 59 55. 85	+ 236. 94
	* + 10° 10′	41	. .	. .	. .	33. 8	34. 8	35. 7	36. 5	37. 4	. .	. .	. .	28 35. 64	+ 0. 07	29. 54	8 28 6. 17	— 12. 43
	*c*¹ Cancri	42	47. 2	48. 1	49. 0	49. 9	52. 7	12. 1	31. 5	34. 4	35. 2	36. 1	37. 0	30 12. 11	0. 08	29. 54	8 29 42. 65	12. 43
	B. Z. 349, 8	43	53. 1	54. 0	55. 1	56. 1	59. 0	20. 7	42. 2	45. 4	46. 3	47. 3	48. 4	33 20. 69	+ 0. 02	29. 54	8 32 51. 17	13. 78
	B. Z. 349, 10	44	11. 8	12. 8	13. 6	14. 6	15. 6	. .	35. 3	38. 5	39. 5	40. 4	41. 4	36 26. 35	— 12. 62	29. 54	8 35 44. 19	13. 78
	ε Hydræ	45	38. 6	39. 4	40. 4	41. 2	44. 0	3. 1	22. 6	25. 4	26. 2	27. 0	28. 0	40 3. 26	+ 0. 05	29. 55	8 39 33. 76	12. 21
	Lacaille 3546	46	51. 9	52. 9	54. 0	54. 9	58. 0	20. 3	42. 5	45. 8	46. 8	47. 7	48. 7	44 20. 32	0. 09	29. 55	8 43 50. 86	9. 94
	Lacaille 3574	47	53. 6	54. 8	55. 8	56. 7	59. 9	22. 5	45. 0	48. 4	49. 4	50. 4	51. 5	47 22. 55	+ 0. 09	29. 55	8 46 53. 09	9. 87
	Lacaille 3595	†48	21. 4	22. 4	23. 5	24. 6	25. 6	. .	46. 4	49. 7	50. 7	51. 7	52. 8	50 36. 88	— 13. 23	29. 55	8 49 54. 10	9. 84
	Lacaille 3617	49	10. 7	11. 6	12. 8	13. 8	17. 0	39. 3	1. 9	5. 0	6. 0	7. 0	7. 9	53 39. 36	+ 0. 09	29. 55	8 53 9. 90	9. 98
	Lacaille 3656	50	15. 6	16. 6	17. 7	18. 5	21. 8	44. 5	7. 0	10. 1	11. 2	12. 3	13. 3	57 44. 42	0. 09	29. 56	8 57 14. 95	10. 01
	Lacaille 3684	51	44. 6	45. 6	46. 6	47. 6	50. 8	12. 8	34. 7	37. 9	39. 0	40. 0	41. 0	2 12. 78	0. 09	29. 56	9 1 43. 31	10. 22
	Lacaille 3704	52	33. 6	34. 5	35. 7	36. 6	39. 5	0. 8	21. 9	25. 0	26. 1	27. 0	28. 0	5 0. 79	0. 08	29. 56	9 4 31. 31	10. 47
	Lacaille 3725	53	12. 6	13. 6	14. 6	15. 7	18. 8	41. 0	3. 2	6. 5	7. 6	8. 6	9. 5	7 41. 06	+ 0. 09	—29. 56	9 7 11. 59	— 10. 22

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*c*.
h.	s.	s.	s.
Mar. 5, 2. 0	— 23. 46	— 0. 033	— 0. 030
8. 8	23. 44	0. 036	. .
9, 5. 3	27. 85	0. 038	. .
11, 11. 8	— 29. 65	— 0. 033	. .

1–2. Unsteady. 3. Faint and very unsteady.
5. Observed with eye and ear over wires A_1, B_1, C_3, D_5, E_5, using clock beat.
6. Observed with eye and ear, using chronograph beat.
13. *c* Leonis, and previous with chronograph beating seconds, after this the clock beats were used; the last observations most reliable.
33–34. Steady. 40. Steady. 48. Preceded by a smaller star to southward.

		r.	
March 9, 8h.	Image west	0. 14.	Clamp west.
	Image west	0. 29.	Clamp east.
	Image west	0. 16.	Clamp west.

Instrument jerked during first reversal.

	s.		*s.*
March 5, 23h. to 2h. n. =	+ 0. 035.	March 11, 23h. to 2h. n. =	+ 0. 050.
6h. to 12h.	— 0. 060.	8h. to 12h.	— 0. 060.
8–9, ...	+ 0. 005.	16h. to 19h.	+ 0. 050.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
.11	Lacaille 3750	1	56. 0	57. 0	58. 0	59. 0	2. 4	25. 1	47. 9	51. 1	52. 2	53. 2	54. 2	10 25. 10	+ 0. 09	—29. 56	9 9 53. 53	— 10. 12
	* — 33° 31′	2	5. 9	6. 9	8. 0	9. 0	12. 2	35. 1	58. 1	1. 4	2. 4	3. 5	4. 5	13 35. 18	+ 0. 09	29. 56	9 13 5. 71	10. 12
	B. A. C. 3190	3	2. 0	5. 3	6. 4	7. 4	8. 6	. .	29. 4	30. 4	33. 6	34. 6	35. 6	15 19. 33	— 40. 15	29. 57	9 14 9. 61	10. 13
	Lacaille 3807	4	57. 6	58. 5	59. 7	0. 6	3. 8	26. 6	49. 4	52. 7	53. 6	54. 7	55. 7	18 26. 63	+ 0. 09	29. 57	9 17 57. 15	10. 24
	Lacaille 3834	5	54. 0	55. 0	56. 2	57. 2	0. 4	23. 3	46. 4	49. 6	50. 7	51. 9	52. 8	21 23. 41	+ 0. 09	29. 57	9 20 53. 93	10. 24
	Lacaille 3838	6	24. 6	27. 9	28. 9	30. 0	31. 0	. .	51. 9	52. 9	56. 1	57. 1	58. 0	22 41. 84	— 39. 99	29. 57	9 21 32. 28	10. 25
	Lacaille 3908	7	9. 7	10. 7	11. 8	12. 9	15. 9	. .	0. 8	4. 0	5. 0	6. 0	7. 0	28 38. 38	+ 0. 08	29. 57	9 28 8. 89	10. 44
	O. Arg. S. 9856	8	. .	. .	. .	38. 5	39. 5	40. 5	41. 5	42. 4	. .	. .	. .	28 40. 48	0. 12	29. 57	9 28 11. 03	10. 44
	B. A. C. 3296	9	19. 5	20. 6	21. 6	22. 6	25. 8	48. 4	10. 8	14. 0	15. 1	16. 1	17. 1	31 48. 33	0. 09	29. 57	9 31 18. 85	10. 47
	Lacaille 3967	10	23. 0	24. 0	25. 0	26. 1	29. 1	51. 3	13. 8	16. 9	17. 9	18. 8	19. 8	34 51. 43	0. 09	29. 58	9 34 21. 94	10. 58
	Lacaille 3984	11	2. 3	3. 4	4. 4	5. 5	8. 7	31. 4	54. 3	57. 4	58. 4	59. 5	0. 5	37 31. 44	0. 09	29. 58	9 37 1. 95	10. 49
	Lacaille 4007	12	25. 6	26. 6	27. 7	28. 7	32. 0	54. 8	17. 6	20. 9	21. 9	22. 9	23. 9	40 54. 78	0. 09	29. 58	9 40 25. 29	10. 53
	Lacaille 4031	†13	57. 3	58. 5	59. 4	0. 5	3. 6	26. 9	50. 2	53. 4	54. 5	55. 5	56. 6	43 26. 95	0. 09	29. 58	9 42 57. 46	10. 40
	Lacaille 4052	14	1. 4	2. 4	3. 5	4. 5	7. 9	30. 5	53. 1	56. 4	57. 4	58. 3	59. 3	46 30. 43	0. 09	29. 58	9 46 0. 94	10. 63
	Lacaille 4065	15	41. 4	42. 4	43. 5	44. 6	47. 8	11. 0	34. 3	37. 5	38. 6	39. 6	40. 7	49 11. 04	0. 09	29. 58	9 48 41. 55	10. 59
	Lacaille 4082	16	6. 4	7. 5	8. 7	9. 7	13. 0	36. 1	59. 3	2. 5	3. 7	4. 8	5. 8	51 36. 14	+ 0. 09	29. 58	9 51 6. 65	10. 63
	π Leonis	17	28. 8	29. 7	30. 6	31. 5	32. 4	. .	50. 0	52. 7	53. 7	54. 6	55. 4	53 41. 94	— 11. 28	29. 59	9 53 1. 07	12. 37
	B. Z. 406, 63	18	20. 9	21. 9	23. 0	24. 0	27. 0	49. 2	11. 4	14. 5	15. 6	16. 6	17. 6	59 49. 25	+ 0. 02	29. 59	9 59 19. 68	13. 50
	B. Z. 406, 64	19	57. 2	58. 2	59. 1	2. 4	3. 5	. .	40. 4	41. 4	44. 6	45. 5	46. 5	59 51. 88	0. 11	29. 59	9 59 22. 40	13. 50
	B. Z. 406, 68	20	58. 0	59. 0	0. 0	1. 0	4. 2	26. 5	48. 9	52. 0	53. 0	54. 0	55. 0	4 26. 51	+ 0. 02	29. 59	10 3 56. 94	13. 50
	Lacaille 4190	21	4. 9	5. 9	7. 0	7. 9	8. 9	. .	28. 9	32. 0	32. 9	34. 0	35. 0	7 19. 74	— 12. 68	29. 59	10 6 37. 47	11. 03
	Lacaille 4218	22	54. 4	55. 3	56. 3	57. 4	0. 5	22. 2	43. 9	46. 9	47. 9	48. 9	49. 9	10 22. 14	+ 0. 09	29. 60	10 9 52. 63	11. 11
	γ^1 Leonis	23	31. 3	32. 2	33. 2	34. 0	36. 9	57. 4	17. 9	20. 7	21. 6	22. 7	23. 6	12 57. 41	0. 03	29. 60	10 12 27. 84	12. 93
	B. A. C. 3554	24	0. 7	1. 7	2. 8	3. 9	6. 9	29. 0	50. 9	54. 0	55. 0	56. 0	57. 0	17 29. 90	0. 09	29. 60	10 17 0. 39	11. 15
	Lacaille 4340	25	31. 0	32. 0	33. 0	34. 0	37. 0	58. 4	19. 9	22. 9	24. 0	24. 9	26. 0	27 58. 46	0. 08	29. 60	10 27 28. 94	11. 35
	Lacaille 4364	26	21. 6	22. 6	23. 8	24. 6	27. 7	49. 2	10. 6	13. 8	14. 8	15. 7	16. 7	30 49. 19	0. 09	29. 61	10 30 19. 67	11. 37
	Lacaille 4393	27	23. 4	24. 3	25. 3	26. 3	29. 3	50. 7	12. 0	15. 0	16. 1	17. 1	18. 0	34 50. 68	0. 08	29. 61	10 34 21. 15	11. 44
	Lacaille 4450	28	42. 2	43. 3	44. 5	45. 8	49. 3	14. 3	39. 4	42. 9	44. 1	45. 3	46. 4	40 14. 32	0. 10	29. 61	10 39 44. 81	11. 21
	Lacaille 4481	29	17. 5	18. 6	19. 8	21. 0	24. 8	50. 3	16. 0	19. 6	20. 7	21. 8	23. 0	43 50. 28	0. 10	29. 61	10 43 20. 77	11. 25
	Lacaille 4508	30	37. 5	38. 5	39. 7	40. 9	44. 8	10. 7	36. 7	40. 2	41. 4	42. 5	43. 8	48 10. 61	0. 10	29. 62	10 47 41. 09	11. 33
	* + 41° 18′	31	. .	. .	. .	56. 8	57. 8	58. 8	0. 0	1. 2	. .	. .	. .	50 58. 92	0. 13	29. 62	10 50 29. 43	11. 39
	Lacaille 4535	32	43. 6	44. 8	45. 9	47. 1	50. 7	16. 3	41. 9	45. 4	46. 4	47. 7	48. 8	52 16. 24	+ 0. 10	29. 62	10 51 46. 72	11. 42
	Lacaille 4553	33	30. 9	32. 1	33. 3	34. 6	35. 7	. .	59. 4	3. 3	4. 5	5. 5	6. 6	54 48. 59	— 15. 07	29. 62	10 54 3. 90	11. 44
	χ Leonis	34	4. 8	5. 5	6. 5	7. 4	10. 2	29. 5	48. 8	51. 5	52. 4	53. 3	54. 2	58 29. 46	+ 0. 05	29. 62	10 57 59. 89	12. 18
	B. Z. 499, 148	35	35. 9	37. 0	38. 1	39. 1	42. 4	6. 0	29. 5	33. 0	34. 2	35. 3	36. 2	5 6. 06	+ 0. 01	29. 62	11 4 36. 45	13. 10
	58 Ursæ Majoris	36	4. 7	5. 8	7. 0	8. 4	12. 2	38. 6	5. 2	8. 8	10. 3	11. 4	12. 6	23 38. 64	— 0. 01	29. 64	11 23 8. 99	13. 16
	Weisse 446	37	35. 5	36. 4	37. 3	38. 2	40. 9	0. 2	19. 6	22. 4	23. 3	24. 2	25. 1	27 0. 28	+ 0. 05	29. 64	11 26 30. 69	12. 19
	υ Leonis	38	4. 2	5. 0	5. 9	6. 7	9. 4	28. 5	47. 7	50. 5	51. 3	52. 3	53. 0	30 28. 59	+ 0. 06	29. 64	11 29 59. 01	12. 09
	B. A. C. 5572	†39	53. 9	54. 8	55. 8	56. 7	57. 7	. .	18. 3	21. 3	22. 2	23. 3	24. 3	34 8. 83	— 13. 02	29. 81	16 33 26. 00	13. 74
	25 Scorpii	40	21. 4	24. 5	25. 5	26. 4	27. 4	.	46. 6	47. 7	50. 5	51. 5	52. 4	39 37. 39	— 37. 16	29. 81	16 38 30. 42	13. 22
	* — 40° 30′	41	36. 0	37. 0	38. 3	39. 5	42. 9	. .	6. 0	7. 1	8. 3	9. 4	10. 4	42 53. 49	+ 14. 65	29. 81	16 42 38. 33	14. 98
	B. A. C. 5639	42	27. 1	28. 3	29. 4	30. 6	31. 9	. .	54. 6	58. 5	59. 6	0. 8	1. 8	43 44. 26	— 14. 78	29. 81	16 42 59. 67	14. 98
	B. A. C. 5671	43	22. 0	23. 0	23. 9	24. 8	25. 8	.	46. 0	49. 1	50. 3	51. 3	52. 2	46 36. 84	13. 05	29. 81	16 45 53. 98	13. 72
	κ Ophiuchi	44	17. 7	18. 6	19. 5	20. 5	23. 3	42. 6	2. 0	4. 8	5. 7	6. 6	7. 5	51 42. 62	0. 02	29. 82	16 51 12. 78	10. 18
	Lacaille 7133	45	42. 2	43. 3	44. 4	45. 5	49. 1	14. 3	39. 9	43. 4	44. 6	45. 7	46. 8	59 14. 46	0. 08	29. 82	16 58 44. 56	14. 99
	η Ophiuchi	46	37. 8	38. 6	39. 5	40. 5	43. 3	3. 1	23. 1	25. 9	26. 8	27. 8	28. 7	3 3. 19	0. 04	29. 82	17 2 33. 33	12. 24
	Moon II	47	7. 5	8. 4	9. 4	10. 3	13. 3	34. 8	56. 3	59. 2	0. 3	1. 2	2. 2	5 34. 81	0. 05	29. 82	17 5 4. 94	. .
	ξ Ophiuchi	48	53. 4	54. 4	55. 2	56. 1	58. 9	19. 6	40. 0	42. 9	43. 9	44. 8	45. 8	13 19. 55	0. 05	29. 83	17 12 49. 67	12. 68
	θ Ophiuchi	49	29. 0	32. 0	32. 9	33. 8	34. 8	. .	53. 9	54. 9	57. 9	58. 7	59. 6	14 44. 75	37. 03	29. 83	17 13 37. 89	13. 05
	b Ophiuchi	50	5. 3	6. 1	7. 2	8. 3	11. 4	32. 1	53. 2	56. 2	57. 1	58. 2	59. 2	18 32. 21	0. 06	29. 83	17 18 2. 32	12. 95
	c^2 Ophiuchi	51	8. 6	9. 5	10. 5	11. 5	14. 3	35. 3	56. 2	59. 2	0. 2	1. 2	2. 1	23 35. 33	0. 06	29. 83	17 23 5. 44	12. 91
	α Ophiuchi	52	40. 7	41. 6	42. 7	43. 5	46. 3	5. 9	25. 3	28. 3	29. 2	30. 2	31. 0	29 5. 88	0. 02	29. 84	17 28 36. 02	9. 77
	ο Serpentis	53	49. 5	50. 4	51. 3	52. 3	55. 0	14. 6	34. 2	37. 0	37. 9	38. 8	39. 8	34 14. 62	0. 04	29. 84	17 33 44. 74	11. 85
	58 Ophiuchi	54	18. 7	19. 6	20. 6	21. 6	24. 4	44. 9	5. 5	8. 5	9. 5	10. 4	11. 3	35 45. 00	0. 05	29. 84	17 35 15. 11	12. 63
	μ Herculis	55	9. 2	10. 2	11. 1	12. 1	15. 0	36. 9	58. 6	1. 6	2. 6	3. 5	4. 4	41 36. 84	— 0. 01	—29. 84	17 41 6. 99	— 8. 16

13. Duplex, observed as one star.
39. Preceded by a smaller star to northward.

March 13, n. = + 0.050 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 11, 11. 8	— 29. 65	— 0. 033	— 0. 030
13, 17. 8	— 31. 39	— 0. 032	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Mar. 11	δ Ursæ Minoris	1	- -	-	- -	17.0	32.0	46.0	1.5	16.0	- -	- -	- -	16 46.70	+ 0.73	—29.86	18 16 17.57	+ 73.03
	α Lyræ	2	17.0	18.1	19.3	20.5	23.9	48.4	13.0	16.4	17.5	18.8	19.8	32 48.43	0.00	29.87	18 32 18.56	— 6.70
13	b Ophiuchi	3	7.0	7.9	8.9	9.9	12.8	33.7	54.7	57.7	58.8	59.7	0.5	18 33.78	— 0.06	31.37	17 18 2.35	13.02
	c² Ophiuchi	4	10.1	11.2	12.1	13.1	15.9	37.0	57.9	1.0	1.9	2.8	3.8	23 36.98	0.06	31.38	17 23 5.54	12.98
	α Ophiuchi	†5	42.3	43.2	44.0	44.9	47.8	7.4	27.2	30.0	30.9	31.7	32.6	29 7.45	0.02	31.38	17 28 36.05	9.83
Y.	λ Sagittarii	†6	37.0	37.8	38.8	39.8	42.7	4.0	25.3	28.4	29.4	30.3	31.2	20 4.06	— 0.06	31.39	18 19 32.61	12.80
	α Lyræ	7	18.7	19.8	20.8	22.1	25.5	50.0	14.6	18.2	19.3	20.4	21.4	32 50.07	0.00	31.41	18 32 18.66	6.76
	Moon II	†8	45.5	46.5	47.4	50.5	51.6	37.5	23.6	24.4	27.4	28.3	29.2	11 37.45	+ 0.04	31.43	19 11 6.06	. .
14 N.	Sun I	9	44.4	45.3	46.3	47.1	49.8	9.0	28.2	30.9	31.8	32.8	33.6	36 9.02	- -	- -	- - - -	- -
	Sun II	10	53.5	54.4	55.3	56.2	58.9	18.1	37.4	40.1	40.9	41.8	42.7	38 18.12	- -	- -	- - - -	- -
23	Sun I	†11	51.9	54.0	55.2	4.8	5.8	7.0	8.1	9.1	18.8	20.0	22.0	9 6.97	- -	- -	- - - -	- -
	Sun II	†12	0.7	2.8	4.0	13.7	14.8	15.9	17.0	18.0	27.4	28.9	30.8	11 15.82	- -	- -	- - - -	- -
25	Sun I	†13	- -	- -	- -	- -	- -	- -	55.1	56.5	57.7	59.0	7.8	16 59.22	— 36.17	40.05	0 15 43.00	- -
	Sun II	14	16.3	18.5	19.6	29.3	30.3	31.4	32.6	33.7	42.3	44.6	46.5	18 31.37	+ 0.11	40.05	0 17 51.43	- -
	Moon I	15	30.5	31.8	33.4	34.6	37.3	- -	43.6	46.1	47.4	48.7	50.2	12 10.52	+ 0.26	40.19	5 11 30.59	- -
		16	54.1	56.3	57.7	8.3	9.4	10.6	12.0	13.2	23.6	25.0	27.2					
	ι Orionis	†17	- -	- -	- -	9.0	10.3	12.2	- -	29.5	30.6	31.8	33.3	30 22.39	— 24.99	40.20	5 29 17.20	10.53
	α Orionis	18	11.8	13.9	15.1	24.9	25.9	27.1	28.3	29.3	38.8	40.0	42.2	48 27.03	+ 0.11	40.21	5 47 46.93	11.37
26 Y.	ζ Cygni	19	30.7	33.1	34.5	45.6	46.8	48.1	49.5	50.7	1.5	3.0	5.3	7 48.07	0.16	41.27	21 7 6.96	8.23
	α Cephei	20	26.5	30.9	33.5	54.1	56.2	58.8	1.3	3.5	23.6	26.5	30.5	15 58.67	0.35	41.27	21 15 17.75	3.54
27 N.	Sun I	21	25.3	27.3	28.4	38.2	39.2	40.4	41.6	42.6	52.2	53.4	55.3	23 40.36	0.11	41.47	0 22 59.00	- -
	Sun II	†22	34.0	36.1	37.3	47.0	48.0	49.1	50.4	51.4	1.0	2.1	4.1	25 49.14	0.11	41.47	0 25 7.78	- -
	Polaris	†23	38.0	27.0	16.5	- -	- -	- -	- -	- -	- -	- -	- -	42 47.17	26 21.36	41.47	1 8 27.06	24.42
	α Arietis	24	53.1	55.4	56.6	- -	- -	- -	- -	- -	22.2	23.5	25.6	0 9.40	+ 0.18	41.50	1 59 28.08	— 10.78
	Venus I	†25	- -	- -	- -	- -	- -	- -	2.6	5.0	6.3	7.4	8.7	1 6.00	— 33.87	41.50	1 59 50.63	+ 0.39
	μ Geminorum	26	7.4	9.6	11.0	21.4	22.4	23.7	25.1	26.1	36.4	37.8	39.9	15 23.71	+ 0.14	41.61	6 14 42.24	— 12.83
	γ Geminorum	27	15.6	17.6	18.9	29.0	30.0	31.3	32.6	33.6	43.4	44.7	46.8	30 31.23	+ 0.13	41.61	6 29 49.75	12.34
	51 Cephei	28	-	- -	- -	- -	41.0	6.3	31.0	51.7	- -	- -	- -	36 17.50	— 9.04	41.62	6 35 26.84	108.55
	α Canis Majoris	29	33.9	36.1	37.4	47.4	48.4	49.7	51.0	52.0	1.8	3.2	5.2	39 49.65	+ 0.09	41.62	6 39 8.12	9.47
	ζ Geminorum	30	3.6	5.0	6.3	7.7	10.2	- -	- -	- -	- -	- -	- -	56 6.56	36.13	41.62	6 56 1.07	12.82
	Moon I	†31	22.0	23.3	24.8	26.2	28.9	- -	34.0	36.5	37.8	38.9	40.6	57 1.47	0.28	41.62	6 56 20.13	. .
		†32	45.2	47.5	48.8	59.2	0.4	1.7	3.0	4.0	14.3	15.7	17.8					
	λ Geminorum	33	41.1	43.3	44.5	54.5	55.6	56.8	58.1	59.1	9.0	10.3	12.4	10 56.79	0.13	41.63	7 10 15.29	12.51
	δ Geminorum	34	23.8	26.0	27.3	37.7	38.8	40.0	41.4	42.4	52.9	54.1	56.2	12 40.05	0.14	41.63	7 11 58.56	12.99
28 Y.	O. Arg. N. 11279	35	7.8	11.7	14.3	33.5	35.6	37.9	40.4	42.3	1.4	3.8	8.1	50 37.89	0.32	42.29	10 49 55.92	15.39
	B. Z. 460, 138	36	55.7	58.4	59.7	11.5	12.7	14.0	15.6	16.7	28.3	29.9	32.3	57 14.07	0.08	42.29	10 56 31.86	13.12
	Weisse 1075	37	33.5	35.7	36.7	46.6	47.7	48.8	50.0	51.0	- -	- -	- -	0 43.75	+ 5.14	42.29	11 0 6.60	12.31
	Weisse 1076	38	- -	- -	- -	57.1	58.2	59.3	0.4	1.4	11.2	12.5	14.5	1 4.32	— 4.99	42.29	11 0 17.04	12.31
	Weisse 1087	39	- -	- -	- -	22.4	23.4	24.6	25.6	26.8	- -	- -	- -	1 24.56	+ 0.04	42.29	11 0 42.31	12.31
	Weisse 1090	40	- -	- -	- -	32.7	33.8	35.0	36.2	37.1	- -	- -	- -	1 34.96	0.04	42.29	11 0 52.71	12.31
	δ Leonis	41	18.1	20.4	21.6	31.9	33.0	34.3	35.6	36.6	46.9	48.2	50.3	7 34.26	0.09	42.29	11 6 52.06	12.59
	δ Crateris	42	59.2	1.3	2.5	12.5	13.5	14.6	15.9	16.9	26.7	28.0	30.1	13 14.65	0.13	42.30	11 12 32.48	11.92
	Weisse 261	43	40.4	42.6	43.8	53.5	54.5	55.6	56.8	57.9	7.4	8.5	10.7	16 55.61	0.10	42.30	11 16 13.41	12.17
	Weisse 284	44	12.9	15.0	16.1	25.8	26.8	27.9	29.2	30.2	39.7	40.9	42.9	18 27.95	0.10	42.30	11 17 45.75	12.16
	* ½ 2 54′	45	26.6	28.8	29.8	39.5	40.5	41.6	43.0	43.9	53.4	54.7	56.7	23 41.68	0.10	42.30	11 22 59.48	12.17
	B. A. C. 3917	46	50.6	52.7	53.9	3.6	4.6	5.8	7.0	8.0	17.5	18.7	20.7	25 5.74	0.10	42.30	11 24 23.54	12.17
	Weisse 429	47	5.3	7.5	8.6	18.3	19.3	20.5	21.8	22.7	32.2	33.6	35.4	26 20.47	0.10	42.30	11 25 38.27	12.15
	Weisse 438	48	- -	- -	- -	43.4	44.5	45.6	46.8	47.9	- -	- -	- -	26 45.64	0.05	42.30	11 26 3.39	12.15
	* 115 W.	49	16.6	18.6	19.8	29.6	30.7	31.9	32.9	33.9	43.4	44.7	46.7	30 31.71	0.10	42.31	11 29 49.50	12.15
	B. A. C. 3962	50	52.6	54.8	55.9	5.6	6.6	7.8	9.0	9.9	19.5	20.7	22.6	34 7.73	0.10	42.31	11 33 25.52	12.16
	Weisse 502	51	- -	- -	- -	9.3	10.3	11.4	12.8	13.7	- -	- -	- -	35 11.50	+ 0.05	—42.31	11 34 29.24	— 12.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 26, 5.6	40.20	— 0.029	+ 0.105
27, 4.3	41.56	0.024	- -
28, 12.3	42.33	— 0.030	- -

5. Ink froze; record nearly illegible.
6. Very faint.
8. Very faint.
11–12. First limb much blurred; no data for reduction.
13. Cloudy, faint; observed over last four of E and wire 7.
17. Set D and last four of E.
22. Good observation.
23. Observed over wire 1, A_1, and A_2.
25. Blurred and tremulous.
31–32. Fine observation.

March 23. The new diaphragm having been put in, the adjustments of focus collimation, etc., were made.

March 25–27. n. = + 0.065 s.
28. — 0.070.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed. R. Ascension	Reduct'n to 1860.0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Mar. 28	Weisse 597	1	49.2	50.3	51.5	52.9	55.3	25.5	55.3	57.8	58.9	0.1	1.4	35 25.29	+ 0.34	—42.31	11 34 43.32	— 12.16
Y.	β Leonis	2	33.7	35.9	37.0	47.1	48.2	49.5	50.6	51.5	1.4	2.8	4.9	42 49.33	0.09	42.31	11 42 7.11	12.15
	* + 1° 6′	3	. .	. .	. .	46.8	47.9	49.0	50.1	51.1	. .	. .	. .	47 48.98	0.05	42.31	11 47 6.72	12.16
	Weisse 921	4	30.2	32.3	33.4	43.2	44.3	45.5	46.8	47.7	57.4	58.7	0.6	54 45.46	0.10	42.32	11 54 3.24	12.18
	Weisse 980	5	. .	. .	. .	37.7	38.8	40.0	41.2	42.3	. .	. .	. .	58 40.00	0.05	42.32	11 57 57.73	12.17
	ο Virginis	6	22.0	23.4	24.7	26.0	28.5	59.0	29.3	31.6	32.9	34.0	35.5	58 58.81	0.34	42.32	11 58 16.83	12.13
	Weisse 1030	7	41.3	43.4	44.6	54.4	55.3	56.5	57.8	58.6	8.1	9.3	11.4	1 56.43	+ 0.11	42.32	12 1 14.22	12.19
	Weisse 1033	8	. .	. .	. .	23.8	25.0	27.0	41.9	44.2	45.4	46.5	48.0	2 37.73	— 25.65	42.32	12 1 29.76	12.19
	Lacaille 5066	9	58.0	0.3	1.8	13.2	14.5	15.8	17.4	18.5	29.8	31.2	33.8	7 15.85	+ 0.17	42.32	12 6 33.70	12.62
	Lacaille 5097	10	51.0	53.4	54.8	6.1	7.3	8.7	10.1	11.2	22.4	23.9	26.2	13 8.65	0.17	42.33	12 12 26.49	12.67
	Weisse 261	11	15.1	17.2	18.4	28.3	29.4	30.4	31.7	32.8	42.4	43.7	45.7	17 30.46	0.09	42.33	12 16 48.22	12.10
	Weisse 345	12	50.6	53.0	54.2	4.1	5.3	6.4	7.5	8.5	18.4	19.5	21.6	22 6.28	0.09	42.33	12 21 24.04	12.08
	Weisse 402	13	6.3	8.4	9.4	19.2	20.1	21.4	22.7	23.7	33.1	34.5	36.3	25 21.37	0.11	42.33	12 24 39.15	12.24
	Weisse 461	14	41.8	44.0	45.3	55.2	56.3	57.5	58.6	59.7	9.2	10.5	12.6	28 57.34	0.09	42.34	12 28 15.09	12.04
	Weisse 519	15	1.0	3.0	4.3	24.2	25.2	26.6	27.8	28.8	38.7	40.0	42.1	32 26.52	+ 0.09	42.34	12 31 44.27	12.02
	* + 14° 34′	16	. .	. .	. .	55.0	56.3	58.4	13.8	16.1	17.4	18.5	19.8	33 9.41	— 26.47	42.34	12 32 0.60	12.02
	Weisse 526	17	. .	. .	. .	4.3	5.5	7.6	23.0	25.4	26.6	27.9	29.3	33 18.70	— 26.47	42.34	12 32 9.89	12.01
	Weisse 652	18	32.7	34.9	35.9	45.9	47.1	48.3	49.4	50.5	0.3	1.5	3.6	39 48.19	+ 0.09	42.34	12 39 5.94	11.98
	Rumker 4124	19	41.6	43.8	45.0	55.0	56.0	57.3	58.5	59.5	9.2	10.4	12.5	40 57.16	+ 0.09	42.34	12 40 14.91	11.97
	29 Comæ	20	. .	. .	. .	59.5	0.9	3.0	18.3	20.8	22.2	23.2	24.5	43 14.05	— 26.51	42.34	12 42 5.20	11.96
	Polaris S. P.	†21	19.0	57.5	10.5	38.0	58.0	8.0	16.0	38.0	20.0	21.0	7.0	9 10.27	— 1.40	42.36	1 8 26.51	24.20
	ζ Virginis	22	13.0	15.1	16.3	25.9	27.0	28.2	29.4	30.3	39.7	41.0	42.9	28 28.07	+ 0.10	42.37	13 27 45.80	12.09
	B. A. C. 4547	23	12.3	14.5	15.6	25.2	26.3	27.5	28.8	29.8	39.3	40.4	42.3	31 27.45	0.11	42.37	13 30 45.19	12.24
	B. Z. 462, 49	24	15.4	17.6	18.9	29.7	30.9	32.3	33.5	34.6	45.1	46.5	48.8	38 32.10	0.08	42.37	13 37 49.81	11.25
	B. Z. 413, 17	25	55.0	57.5	58.8	10.4	11.5	12.9	14.3	15.4	26.6	28.1	30.5	43 12.82	0.08	42.37	13 42 30.53	10.98
	Weisse 785	26	9.0	11.1	12.4	22.1	23.1	24.3	25.5	26.5	36.1	37.5	39.4	47 24.27	0.10	42.37	13 46 42.00	11.75
	Rumker 4517	27	43.4	45.6	46.7	56.8	57.7	59.0	0.2	1.3	11.1	12.4	14.4	49 58.96	0.09	42.38	13 49 16.67	11.55
	Σ. Cat. Gen. 1570	28	. .	. .	. .	30.4	31.4	32.7	34.1	35.2	. .	. .	. .	53 32.76	0.03	42.38	13 52 50.41	11.06
	α Bootis	29	53.9	56.2	57.4	7.7	8.7	10.0	11.2	12.3	22.4	23.7	25.8	10 9.94	+ 0.09	42.39	14 9 27.64	— 10.93
29	λ Ursæ Minoris, S. P.	†30	. .	. .	. .	. .	1.0	0.0	55.0	. .	. .	. .	. .	0 58.67	— 3.01	42.90	20 0 12.76	+ 220.62
N.	Moon I	31	38.6	40.0	41.3	42.5	45.1	. .	48.2	50.7	51.9	53.2	54.6	37 16.72	+ 0.25	42.92	8 36 34.05	. .
		32	1.1	3.2	4.5	14.5	15.6	16.8	18.2	19.1	29.0	30.5	32.6					
	ε Hydræ	33	. .	. .	. .	. .	. .	. .	46.4	48.6	49.9	51.1	52.6	40 49.72	— 33.21	42.93	8 39 33.58	— 11.98
	α Cancri	34	29.5	31.5	32.6	42.4	43.7	44.9	46.1	47.1	56.8	58.1	0.2	51 44.81	+ 0.11	42.93	8 51 1.99	12.38
	κ Cancri	35	49.4	51.7	52.9	2.6	3.6	4.9	6.1	7.1	16.7	18.0	20.0	1 4.82	0.11	42.94	9 0 21.99	12.31
	ε Pegasi	36	56.2	58.2	59.4	9.2	10.2	11.6	12.7	13.7	23.3	24.7	26.6	38 11.44	+ 0.11	43.40	21 37 28.15	9.64
	α Piscis Australis	†37	. .	. .	. .	45.9	47.0	48.4	49.8	51.0	1.8	3.4	5.6	50 54.11	— 5.66	43.44	22 50 5.01	10.50
	α Pegasi	38	24.6	26.7	28.0	37.9	38.9	40.2	41.4	42.4	52.2	53.5	55.5	58 40.12	+ 0.11	43.44	22 57 56.79	9.51
30	Sun I	39	21.0	23.3	24.3	34.2	35.3	36.5	37.6	38.5	48.0	49.4	51.3	34 36.31	0.11	43.50	0 33 52.92	. .
	Sun II	40	30.1	32.1	33.2	42.9	43.8	45.1	46.4	47.2	56.8	58.1	0.1	36 45.07	0.11	43.50	0 36 1.68	. .
	Polaris	†41	56.0	17.5	5.5	39.0	19.0	8.0	. .	36.0	59.0	51.0	10.5	10 0.15	+ 9.54	43.51	1 9 26.18	23.94
	α Ceti	42	. .	. .	. .	. .	. .	. .	21.4	23.7	24.9	25.9	27.5	56 24.68	— 33.08	43.57	2 55 8.03	10.09
31	10 Leonis	43	30.0	32.0	33.3	43.1	44.1	45.2	46.5	47.3	56.9	58.2	0.2	30 45.16	+ 0.15	44.17	9 30 1.14	12.14
Y.	ο Leonis	44	21.5	23.6	25.0	34.6	35.7	36.9	38.2	39.1	48.8	50.0	52.2	34 36.87	0.15	44.17	9 33 52.85	12.30
	ε Leonis	45	34.4	36.7	38.1	48.5	49.7	51.0	52.4	53.4	3.9	5.3	7.3	38 50.97	0.13	44.17	9 38 6.93	13.08
	* 114 W.	46	42.2	44.2	45.3	55.4	56.5	57.6	58.8	59.8	9.7	11.0	13.0	46 57.59	0.14	44.18	9 46 13.55	12.54
	B. Z. 349, 81	47	32.1	34.4	35.7	46.8	48.0	49.3	50.7	51.7	2.7	4.0	6.2	49 49.24	0.13	44.18	9 49 5.19	13.31
	π Leonis	48	29.8	31.9	33.0	42.8	43.9	45.0	46.3	47.4	56.9	58.2	0.2	53 45.04	0.15	44.18	9 53 1.01	12.22
	Lacaille 4120	49	50.9	53.2	54.5	6.0	7.2	8.6	10.1	11.2	22.4	24.0	26.3	58 8.57	+ 0.22	44.18	9 57 24.61	10.59
	B. Z. 406, 63	50	. .	. .	. .	17.2	18.6	20.9	38.1	40.8	42.3	43.5	45.1	0 33.31	— 29.61	44.19	9 59 19.51	13.34
	* — 32° 10′	51	. .	. .	. .	31.5	32.7	34.1	35.6	36.6	. .	. .	. .	3 34.10	+ 0.17	44.19	10 2 50.08	10.70
	Lacaille 4165	52	57.2	59.7	1.1	12.4	13.8	15.0	16.5	17.6	29.0	30.4	32.6	4 15.03	0.22	44.19	10 3 31.06	10.70
	Locaille 4192	53	11.8	14.4	15.8	27.1	28.2	29.7	31.1	32.2	43.4	44.9	47.2	7 29.62	+ 0.22	—44.19	10 6 45.65	— 10.77

21. First two wires of B seem too close.
30. The first wire was recorded 45.0 or 55.0.
37. Very faint.
41. Very tremulous.

March 28. 14h. 15m. Image west $\overset{r.}{0.07}$. Clamp west.

March 29, 8h. to 9h. n. = $\overset{s.}{+0.010}$.
29–30, 21h. to 1h. +0.005.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Mar. 29, 8.8	— 42.93	— 0.030	+ 0.105
23.5	— 43.46	— 0.032	. .
31, 14.7	— 44.36	— 0.037	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	IX.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Mar. 31	Moon I	†1	4.4	5.6	7.0	8.3	10.7	. .	12.5	14.7	15.9	17.0	18.5	14 41.60	+ 0.28	—44.19	10 13 57.69	. .
		†2	26.4	28.4	29.5	39.5	40.5	41.8	43.0	44.1	53.7	55.0	57.0					
	Polaris, S. P.	†3	47.5	53.0	0.0	11.0	32.0	. .	5.0	33.0	40.0	56.0	58.0	9 11.41	— 1.17	44.30	1 8 25.94	— 23.70
		†4	20.0	55.5	8.0	40.5	57.5	9.6	21.0	41.0	19.0	26.0	8.0					
	Weisse 731	5	33.2	35.2	36.6	46.4	47.5	48.7	50.1	51.0	0.7	2.0	4.0	43 48.67	+ 0.18	44.32	13 43 4.53	12.69
	η Bootis	6	40.7	43.1	44.4	54.5	55.5	56.8	58.0	59.0	9.0	10.5	12.6	48 56.74	0.14	44.33	13 48 12.55	11.43
	* + 75° 27′	7	30.7	38.8	43.5	21.5	25.5	30.5	35.5	38.9	16.5	21.4	28.9	55 30.15	+ 0.18	44.33	13 54 46.00	6.33
	* + 75° 25′	8	. .	. .	. .	4.0	9.3	17.1	15.9	25.0	30.3	35.0	40.1	57 59.59	— 1 41.91	44.33	13 55 33.35	6.29
	O. Arg. S. 13444	9	16.1	18.3	19.6	29.6	30.6	31.9	33.1	34.1	44.0	45.3	47.4	4 31.82	+ 0.18	44.34	14 3 47.66	12.95
	α Bootis	10	55.7	57.9	59.1	9.4	10.6	11.9	13.3	14.3	24.4	25.7	27.7	10 11.82	0.14	44.34	14 9 27.62	10.98
	μ Sagittarii	11	4.8	6.9	8.1	18.6	19.7	20.8	22.0	23.2	33.4	34.8	36.9	6 20.84	0.12	44.49	18 5 36.47	— 13.04
	δ Ursæ Minoris	12	54.0	28.0	48.0	30.0	48.5	9.0	29.5	44.5	25.0	47.0	20.0	17 7.59	1.60	44.49	18 16 24.70	+ 65.92
	1 Aquilæ	13	16.2	18.4	19.5	29.3	30.3	31.5	32.6	33.7	43.2	44.6	46.5	28 31.44	+ 0.11	44.50	18 27 47.05	— 11.75
	51 Cephei, S. P.	14	. .	. .	. .	57.5	36.0	11.0	46.0	25.0	. .	. .	. .	36 11.10	— 1.01	44.50	6 35 25.59	106.65
	β Lyræ	15	29.0	31.5	32.9	44.4	45.6	47.0	48.5	49.7	1.0	2.5	4.9	45 47.00	+ 0.12	44.51	18 45 2.61	7.95
April 1 N.	Sun I	16	38.7	40.7	41.9	51.7	52.8	53.9	55.1	56.2	5.6	7.1	8.9	41 53.87	0.11	44.84	0 41 9.14	. .
	Sun II	17	47.7	49.7	51.0	0.6	1.6	2.9	4.1	5.0	14.6	15.9	17.9	44 2.82	0.11	44.84	0 43 18.09	. .
	Polaris	18	. .	. .	. .	34.0	18.0	7.0	54.0	. .	. .	. .	. .	8 43.25	27.79	—44.85	1 8 26.19	23.63
	α Arietis	19	56.4	58.7	0.0	10.4	11.5	12.8	14.1	15.3	25.4	27.0	29.0	59 12.78	0.15	+15.13	1 59 28.06	10.77
	Venus I	20	18.8	20.2	21.6	22.9	25.4	. .	27.6	30.0	31.2	32.4	33.9	22 56.40	0.38	15.12	2 23 11.90	. .
	Venus II	21	41.8	44.0	45.2	55.1	56.2	57.6	58.7	59.8	9.6	10.8	12.9	22 57.43	+ 0.12	15.12	2 23 12.67	. .
	α Ceti	22	. .	. .	. .	. .	. .	. .	22.7	24.9	26.2	27.3	28.8	55 25.98	— 33.11	15.11	2 55 7.98	10.08
	Lacaille 2814	23	. .	. .	. .	4.3	5.5	6.8	8.2	9.3	19.9	21.5	23.6	22 12.39	— 5.55	15.02	7 22 21.86	8.80
	B. A. C. 2484	24	52.2	54.4	55.8	6.9	8.2	9.5	11.0	12.1	23.2	24.7	26.9	25 9.54	+ 0.07	15.02	7 25 24.63	8.58
	Lacaille 2852	25	43.5	46.0	47.5	58.8	0.1	1.5	3.0	4.2	15.5	17.2	19.5	28 1.53	+ 0.06	15.02	7 28 16.61	8.36
	Lacaille 2859	26	. .	. .	. .	47.2	48.4	49.9	51.2	52.5	3.8	5.3	7.7	28 55.75	— 5.86	15.02	7 29 4.91	8.36
	Lacaille 2873	27	8.5	11.0	12.3	23.9	25.1	26.4	28.0	29.2	40.4	42.0	44.4	30 26.47	+ 0.06	15.02	7 30 41.55	8.39
	α Canis Minoris	28	39.5	41.6	42.8	52.4	53.5	54.7	55.8	56.9	6.4	7.6	9.7	31 54.63	0.11	15.02	7 32 9.76	11.45
	Lacaille 2908	29	30.7	33.0	34.3	. .	. .	. .	. .	. .	1.5	2.9	5.2	34 47.93	0.10	15.02	7 35 3.05	8.78
	O. Arg. S. 7237	30	. .	. .	. .	48.1	49.3	50.7	52.2	53.3	. .	. .	. .	34 50.72	0.02	15.02	7 35 5.76	8.78
	Lacaille 2952	31	34.9	37.1	38.5	48.9	50.2	51.3	52.7	53.9	4.1	5.6	7.7	39 51.35	0.07	15.02	7 40 6.44	9.36
	Lacaille 3006	32	50.2	52.6	54.0	5.4	6.8	8.1	9.7	10.6	22.0	23.6	24.9	44 7.99	+ 0.06	15.02	7 44 23.07	— 8.58
	ε Draconis, S. P.	33	5.5	0.1	56.8	28.5	25.2	22.0	18.6	15.8	48.0	44.2	38.8	48 22.14	— 0.52	15.01	19 48 36.63	+ 1.37
	Lacaille 3078	34	19.8	22.3	23.7	35.3	36.7	38.1	39.5	40.7	52.1	53.6	56.0	51 37.98	+ 0.06	15.01	7 51 53.05	— 8.57
	6 Cancri	35	36.2	38.5	39.8	50.7	51.9	53.3	54.6	55.7	6.4	8.0	10.2	54 53.21	+ 0.16	15.01	7 55 8.38	— 13.53
	λ Ursæ Minoris S. P.	†36	. .	. .	. .	2.5	10.0	8.5	5.5	13.5	. .	. .	. .	0 8.00	— 7.06	15.01	8 0 15.95	+ 217.65
	ω Puppis	37	28.4	30.8	32.3	43.7	44.9	46.2	47.8	48.9	0.1	1.7	4.0	15 46.25	+ 0.06	15.00	8 16 1.31	— 9.03
	Lacaille 3302	38	2.9	5.4	6.6	18.3	19.5	20.8	22.2	23.4	34.6	36.1	38.5	18 20.75	0.06	15.00	8 18 35.81	9.08
	B. A. C. 2846	39	35.1	37.4	38.8	49.4	50.5	51.8	53.2	54.2	4.7	6.2	8.3	21 51.78	0.07	15.00	8 22 6.85	9.67
	η Cancri	40	18.2	20.4	21.6	32.0	33.1	34.3	35.6	36.6	46.7	48.2	50.3	24 34.27	0.14	15.00	8 24 49.41	12.90
	Lacaille 3388	41	38.3	40.5	. .	52.5	53.6	54.9	56.3	57.4	. .	9.0	11.3	27 54.87	0.05	15.00	8 28 9.92	9.83
	B. A. C. 2910	42	43.6	45.9	47.1	58.0	59.1	0.4	1.7	2.8	13.4	14.8	16.8	31 0.33	0.07	15.00	8 31 15.40	9.76
	g Mali	43	31.4	33.7	35.0	45.8	46.9	48.3	49.6	50.6	1.2	2.6	4.8	31 48.17	0.07	15.00	8 32 3.24	9.79
	f Mali	44	. .	. .	. .	45.9	47.2	48.6	49.9	51.0	. .	. .	. .	33 48.52	0.02	15.00	8 34 3.54	9.56
	Lacaille 3474	45	51.5	53.9	55.2	6.3	7.4	8.7	10.2	11.2	22.0	23.5	25.7	37 8.69	0.07	15.00	8 37 23.76	9.61
	Lacaille 3509	46	48.2	50.5	51.8	2.5	3.6	5.0	6.4	7.5	18.0	19.6	21.7	40 4.98	0.07	15.00	8 40 20.05	9.86
	B. A. C. 3006	47	46.9	49.3	50.8	2.1	3.3	4.8	6.1	7.3	18.5	20.0	22.4	44 4.68	0.06	15.00	8 44 19.74	9.46
	Lacaille 3582	48	2.4	4.8	6.2	17.5	18.8	20.1	21.6	22.8	33.8	35.4	37.6	48 20.09	+ 0.06	14.99	8 48 35.14	9.57
	Lacaille 3601	49	. .	. .	. .	26.4	27.7	28.9	30.3	31.4	42.2	43.6	45.9	50 34.55	— 5.58	14.99	8 50 43.96	9.81
	B. A. C. 3070	50	56.9	59.3	0.6	11.5	12.7	14.0	15.5	16.6	27.4	28.7	31.0	53 14.02	+ 0.07	14.99	8 53 29.08	9.88
	B. A. C. 3082	51	45.5	47.7	48.9	59.7	0.9	2.2	3.6	4.7	15.1	16.7	18.8	55 2.16	0.07	14.99	8 55 17.22	10.05
	Lacaille 3643	52	25.5	27.7	29.0	39.8	41.0	42.2	43.6	44.7	55.2	56.7	58.8	55 42.20	0.07	14.99	8 55 57.26	10.06
	σ^2 Ursæ Majoris	53	. .	. .	. .	0.9	3.5	6.7	9.9	12.5	. .	. .	. .	58 6.70	0.35	14.99	8 58 22.04	20.69
	e Mali	54	38.1	40.5	41.8	52.8	54.1	55.4	56.8	58.2	8.9	10.4	12.6	3 55.42	0.07	14.99	9 4 10.48	9.92
	Lacaille 3725	55	38.9	41.2	42.6	53.9	55.2	56.5	57.9	59.1	9.9	11.5	13.7	6 56.40	+ 0.07	+14.99	9 7 11.46	— 9.92

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 1, 8.0	+ 15.01	— 0.020	+ 0.100

1–2. Through thin clouds.
3–4. Only the middle elements are reduced.
36. Good observation.

March 31, 10h. 35m. Image west $\overset{r.}{0.03}$. Clamp west.

March 31, 9h. to 15h. n. = $\overset{s.}{—0.075}$.
18h. to 19h. —0.010.
April 1, +0.085.
April 1. After α Arietis put the clock back one minute.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed. R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
April 1	Lacaille 3750 . .	1	22. 6	25. 0	26. 4	37. 9	39. 0	40. 5	41. 9	43. 2	54. 4	55. 9	58. 1	9 40. 45	+ 0. 06	+14. 99	9 9 55. 50	— 9. 81
	B. A. C. 3190 . .	2	36. 4	38. 9	40. 3	51. 9	53. 2	54. 5	56. 0	57. 2	8. 5	10. 2	12. 4	13 54. 50	0. 06	14. 99	9 14 9. 55	9. 83
	1 (Hev.) Draconis .	3	. .	. .	. .	54. 1	1. 4	9. 9	18. 7	25. 7	.	. .	. .	17 9. 96	0. 98	14. 98	9 17 25. 92	37. 29
N.	α Hydræ	4	23. 6	25. 6	26. 8	36. 5	37. 6	38. 8	40. 0	41. 0	50. 5	51. 9	53. 9	20 38. 75	0. 09	14. 98	9 20 53. 82	11. 32
	B. A. C. 3243 . .	5	7. 1	9. 3	10. 7	21. 4	22. 6	23. 8	25. 3	26. 4	. .	. .	. .	23 18. 32	+ 5. 58	14. 98	9 23 38. 88	10. 42
	B. A. C. 3248 . .	6	. .	. .	. .	34. 7	35. 9	37. 2	38. 6	39. 7	50. 2	51. 7	53. 8	23 42. 72	— 5. 47	14. 98	9 23 52. 23	10. 42
	Lacaille 3908 . .	7	36. 2	38. 7	39. 9	51. 1	52. 5	53. 9	55. 3	56. 4	7. 5	9. 0	11. 3	27 53. 80	+ 0. 06	14. 98	9 28 8. 84	10. 18
	B. A. C. 3296 . .	8	46. 1	48. 5	49. 8	1. 1	2. 4	3. 7	5. 2	6. 3	17. 4	19. 0	21. 3	31 3. 71	0. 06	14. 98	9 31 18. 75	10. 22
	Lacaille 3984 . .	9	29. 0	31. 5	32. 7	44. 3	45. 6	46. 8	48. 4	49. 5	0. 7	2. 3	4. 7	36 46. 86	0. 06	14. 98	9 37 1. 90	10. 24
	Lacaille 4002 . .	10	44. 3	46. 7	47. 9	58. 6	59. 8	1. 2	2. 5	3. 5	14. 1	15. 6	17. 8	40 1. 09	+ 0. 07	14. 98	9 40 16. 14	10. 60
	Lacaille 4031 . .	†11	. .	. .	. .	39. 8	41. 0	42. 4	43. 8	45. 0	56. 3	58. 0	0. 4	42 48. 34	— 5. 98	14. 98	9 42 57. 34	10. 24
	Lacaille 4052 . .	12	28. 0	30. 5	32. 0	43. 2	44. 4	45. 7	47. 2	48. 5	59. 6	1. 1	3. 5	45 45. 79	+ 0. 06	14. 98	9 46 0. 83	10. 41
	Lacaille 4065 . .	13	8. 3	10. 7	12. 3	23. 8	25. 1	26. 5	28. 0	29. 4	40. 6	42. 2	44. 4	48 26. 48	0. 06	14. 98	9 48 41. 52	10. 36
	Lacaille 4082 . .	14	33. 4	36. 0	37. 4	48. 9	50. 2	51. 5	53. 0	54. 2	5. 5	7. 1	9. 7	50 51. 54	0. 06	14. 97	9 51 6. 57	10. 40
	π Leonis	15	30. 7	32. 8	33. 9	43. 6	44. 8	46. 0	. .	48. 1	57. 7	59. 0	1. 0	52 45. 76	0. 24	14. 97	9 53 0. 97	12. 21
	α Leonis	16	36. 7	38. 8	40. 0	49. 7	50. 9	52. 1	53. 4	54. 4	4. 0	5. 3	7. 4	0 52. 06	0. 12	14. 97	10 1 7. 15	12. 34
	Lacaille 4165 . .	17	58. 3	0. 6	2. 1	13. 5	14. 8	16. 1	17. 6	18. 8	29. 8	31. 5	33. 7	3 16. 07	0. 06	14. 97	10 3 31. 10	10. 69
	Lacaille 4190 . .	18	5. 1	7. 4	8. 8	19. 8	21. 0	22. 4	23. 7	24. 9	35. 6	37. 2	39. 4	6 22. 30	0. 07	14. 97	10 6 37. 34	10. 87
	Lacaille 4218 . .	19	20. 5	22. 8	24. 2	35. 0	36. 2	37. 7	38. 9	39. 9	50. 7	52. 2	54. 3	9 37. 49	0. 07	14. 97	10 9 52. 53	10. 95
	B. A C. 3521 . .	20	21. 7	23. 9	25. 3	36. 3	37. 5	38. 8	40. 2	43. 3	52. 0	53. 5	55. 8	11 38. 85	0. 07	14. 97	10 11 53. 89	10. 97
	Lacaille 4257 . .	21	28. 5	30. 9	32. 3	42. 8	43. 9	45. 3	46. 5	47. 7	58. 1	59. 5	1. 6	14 45. 19	+ 0. 07	14. 97	10 15 0. 23	11. 13
	44 Leonis	22	. .	. .	. .	47. 4	48. 5	49. 7	50. 9	51. 9	1. 4	2. 8	4. 7	17 54. 66	— 4. 90	14. 96	10 18 4. 72	12. 27
	ρ Leonis	23	8. 2	10. 3	11. 6	21. 3	22. 3	23. 5	24. 8	25. 8	35. 2	36. 6	38. 7	25 23. 48	+ 0. 12	14. 96	10 25 38. 56	12. 29
	Lacaille 4364 . .	24	47. 7	49. 9	51. 2	2. 1	3. 2	4. 6	5. 9	7. 2	17. 7	19. 2	21. 3	30 4. 55	0. 07	14. 96	10 30 19. 58	11. 26
	Lacaille 4382 . .	25	10. 8	13. 0	14. 4	25. 0	26. 0	27. 4	28. 8	29. 9	40. 4	41. 8	43. 9	32 27. 40	0. 07	14. 96	10 32 42. 43	11. 34
	Lacaille 4406 . .	26	53. 5	55. 7	57. 0	7. 8	8. 8	10. 1	11. 5	12. 6	23. 1	24. 5	26. 7	35 10. 12	0. 07	14. 96	10 35 25. 15	11. 37
	Moon I . . . {	27	8. 6	10. 0	11. 3	12. 7	15. 1	. .	16. 4	18. 7	19. 9	21. 1	22. 6	} 2 45. 77	0. 22	14. 95	11 3 0. 94	. .
		28	30. 6	32. 6	33. 8	43. 6	44. 8	45. 9	47. 2	48. 2	57. 8	59. 1	1. 2					
	Lacaille 4646 . .	29	2. 5	4. 6	6. 1	16. 6	17. 9	19. 2	20. 6	21. 6	32. 1	33. 6	35. 8	6 19. 15	0. 07	14. 95	11 6 34. 17	11. 76
	φ Leonis	30	14. 6	16. 8	17. 9	27. 5	28. 6	29. 8	31. 0	32. 0	41. 4	42. 7	44. 7	9 29. 73	0. 10	14. 95	11 9 44. 78	12. 05
	δ Crateris	31	2. 1	4. 2	5. 3	15. 4	16. 4	17. 6	18. 8	19. 9	29. 6	31. 0	33. 0	12 17. 57	0. 08	14. 95	11 12 32. 60	11. 91
2	α Pegasi	32	27. 6	29. 5	30. 7	40. 6	41. 7	42. 9	44. 1	45. 1	54. 9	56. 3	58. 3	57 42. 88	0. 10	13. 96	22 57 56. 94	9. 58
3	Sun I . . . {	33	26. 3	. .	. .	. .	41. 2	. .	41. 9	. .	. .	. .	57. 0	} 48 12. 03	0. 10	13. 90	0 48 26. 03	. .
		34	56. 9	59. 0	0. 1	9. 8	10. 9	12. 1	13. 3	14. 3	23. 7	25. 1	27. 1					
	Sun II . . . {	†35	35. 6	. .	. .	. .	50. 5	. .	50. 8	. .	. .	. .	6. 0	} 50 20. 95	+ 0. 10	13. 90	0 50 34. 95	. .
		†36	5. 8	7. 9	9. 0	18. 8	19. 8	21. 0	22. 2	23. 1	32. 8	34. 0	36. 0					
	Polaris	37	. .	. .	. .	. .	20. 0	11. 0	58. 0	39. 0	. .	. .	.	8 32. 00	— 20. 11	13. 89	1 8 25. 78	— 23. 51
	λ Ursæ Minoris, S. P.	†38	. .	. .	. .	. .	. .	. .	26. 0	28. 0	12. 5	. .	. .	11 42. 17	— 11 35. 63	13. 67	20 0 20. 21	+ 214. 08
	ω Puppis	†39	29. 7	32. 2	33. 5	44. 9	46. 2	47. 6	48. 9	50. 0	1. 4	2. 8	5. 2	15 47. 49	+ 0. 13	13. 67	8 16 1. 29	— 8. 99
	29 Cancri	40	31. 4	33. 5	34. 7	44. 8	45. 8	47. 0	48. 4	49. 3	59. 1	0. 5	2. 4	20 46. 99	0. 10	13. 67	8 21 0. 76	12. 41
	η Cancri	41	19. 4	21. 7	22. 9	33. 3	34. 4	35. 7	36. 9	38. 0	. .	. .	. .	24 30. 29	+ 5. 40	13. 67	8 24 49. 36	— 12. 87
	Groom. 3241, S. P.	42	8. 7	1. 8	58. 5	27. 0	23. 5	20. 1	16. 2	12. 7	41. 9	38. 0	31. 4	30 19. 98	— 0. 25	13. 66	8 30 33. 39	+ 2. 54
	ε Hydræ	43	4. 5	6. 5	7. 8	17. 6	18. 6	19. 8	21. 0	22. 0	31. 5	32. 8	34. 7	39 19. 71	+ 0. 10	13. 66	8 39 33. 47	— 11. 91
	Moon II	†44	. .	. .	. .	. .	. .	. .	. .	. .	12. 7	14. 4	15. 4	48 13. 17	— 35. 92	13. 53	12 47 50. 78	. .
	θ Virginis	45	. .	.	. .	38. 8	40. 0	41. 0	42. 3	43. 4	52. 6	54. 0	56. 0	2 46. 01	— 4. 90	13. 52	13 2 54. 63	12. 35
	Polaris, S. P. . .	46	. .	57. 0	10. 5	. .	57. 0	. .	22. 0	. .	19. 5	27. 0	7. 0	6 45. 71	+ 1 25. 88	13. 52	1 8 25. 11	23. 53
	61 Virginis	47	48. 5	50. 5	51. 8	2. 0	3. 0	4. 1	5. 6	6. 5	16. 5	17. 8	19. 8	11 4. 19	0. 11	13. 52	13 11 17. 82	12. 80
	α Virginis	48	32. 8	35. 1	36. 4	46. 1	47. 1	48. 3	49. 5	50. 6	0. 2	1. 5	3. 4	17 48. 27	0. 11	13. 51	13 18 1. 89	12. 57
	ζ Virginis	49	17. 2	19. 2	20. 5	30. 1	31. 1	32. 4	33. 5	34. 5	44. 0	45. 2	47. 3	27 32. 27	0. 10	13. 51	13 27 45. 88	— 12. 15
	Jupiter I . . .	50	7. 2	9. 6	10. 7	20. 4	21. 5	22. 8	23. 9	24. 8	34. 4	35. 8	37. 7	29 22. 62	0. 10	13. 51	13 29 36. 23	. .
	Jupiter II . . .	51	48. 9	50. 2	51. 6	52. 9	55. 2	. .	55. 8	58. 0	59. 3	0. 4	1. 9	29 25. 42	+ 0. 35	13. 51	13 29 39. 28	. .
6	λ Ursæ Minoris, S. P.	52	. .	. .	. .	. .	. .	. .	34. 0	29. 0	24. 0	. .	. .	28 9. 00	— 27 58. 76	11. 55	20 0 21. 79	+ 211. 60
	Lacaille 3469 .	†53	12. 3	14. 7	16. 1	27. 4	28. 7	30. 1	31. 5	32. 6	43. 8	45. 3	47. 7	36 30. 02	+ 0. 03	11. 53	8 36 41. 58	— 9. 30
	ε Hydræ	54	. .	. .	. .	19. 8	20. 8	22. 0	23. 1	24. 2	33. 6	35. 0	37. 0	39 26. 94	— 4. 99	+11. 53	8 39 33. 48	— 11. 87

11. Much blurred. Duplex?
35–36. Good observation.
38. Good observation.
39. Faint and blurred; cloudy.
44. Last wires.
53. Cloudy?

April 2–3, 22h. to 2h. n. = + 0. 007 s.
3, 8h. to 9h. — 0. 025.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 3, 9. 3	+ 13. 64	— 0. 031	+ 0. 100
12. 0	. .	. .	+ 0. 032

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. April 6	Lacaille 3529	1	. .	. .	. .	16.4	17.3	18.7	20.1	21.2	32.0	33.3	35.5	42 24.29	− 5.62	+11.53	8 42 30.20	− 9.65
	B. A. C. 3007	2	8.1	10.3	11.6	22.6	23.7	25.1	26.5	27.6	38.4	39.8	41.9	44 25.05	+ 0.03	11.53	8 44 36.61	9.68
	Lacaille 3582	3	5.9	8.3	9.7	21.0	22.3	23.6	25.0	26.2	37.3	38.8	41.1	48 23.56	0.03	11.53	8 48 35.12	9.48
N.	Lacaille 3601	4	15.2	17.5	18.9	29.8	31.0	32.4	33.8	34.8	45.6	47.1	49.3	50 32.31	0.03	11.53	8 50 43.87	9.71
	B. A. C. 3070	5	0.4	2.6	4.0	15.0	16.2	17.4	18.8	20.0	30.7	32.3	34.5	53 17.45	+ 0.03	11.52	8 53 29.00	9.79
	Lacaille 3643	6	. .	. .	. .	43.0	44.4	45.7	47.1	48.3	58.7	0.1	2.3	55 51.20	− 5.52	11.52	8 55 57.20	9.98
	Lacaille 3671	7	49.8	52.3	53.5	4.6	5.7	7.0	8.4	9.5	20.3	21.7	24.0	59 6.98	+ 0.03	11.52	8 59 18.53	9.86
	Lacaille 3704	8	2.7	4.9	6.2	17.0	18.3	19.6	20.9	22.0	32.5	34.0	36.0	4 19.46	0.03	11.52	9 4 31.01	10.10
	Lacaille 3726	9	3.5	5.7	6.9	18.0	19.1	20.6	21.9	23.0	34.0	35.5	37.6	7 20.53	0.03	11.52	9 7 32.08	9.93
	83 Cancri	10	55.1	57.1	58.4	8.5	9.6	10.8	12.2	13.2	23.0	24.5	26.6	11 10.82	0.04	11.52	9 11 22.38	12.62
	Lacaille 3788	11	24.6	27.5	28.8	39.8	41.0	42.3	43.7	44.9	55.6	57.0	59.0	14 42.20	0.03	11.52	9 14 53.75	10.09
	B. A. C. 3207	12	50.2	52.6	53.9	4.9	6.1	7.4	8.7	9.9	20.7	22.2	24.4	17 7.36	0.03	11.51	9 17 18.90	10.12
	α Hydræ	13	27.0	29.1	30.2	40.0	41.1	42.2	43.5	44.5	54.0	55.3	57.3	20 42.20	0.03	11.51	9 20 53.74	11.26
	B. A. C. 3243	14	46.7	48.1	49.6	51.0	53.7	. .	0.6	3.0	4.4	5.6	7.3	23 27.00	0.31	11.51	9 23 38.82	10.34
	B. A. C. 3248	15	23.9	26.1	27.6	38.3	39.4	40.7	42.1	43.1	53.8	55.0	57.2	23 40.65	+ 0.03	11.51	9 23 52.19	10.34
	Lacaille 3892	16	. .	. .	. .	7.0	8.2	9.6	10.9	12.0	22.8	24.4	26.6	26 15.19	− 5.62	11.51	9 26 21.08	10.27
	Lacaille 3923	17	57.9	0.2	1.5	11.9	13.1	14.4	15.7	16.9	27.3	28.7	30.8	30 14.40	+ 0.03	11.51	9 30 25.94	10.53
	Lacaille 3976	18	26.3	28.7	30.1	41.1	42.3	43.6	45.0	46.3	57.0	58.4	0.8	35 43.60	0.03	11.50	9 35 55.13	10.31
	Lacaille 4002	19	47.7	50.1	51.2	2.0	3.3	4.6	5.8	7.0	17.6	19.0	21.2	40 4.50	0.03	11.50	9 40 16.03	10.53
	μ Leonis	20	32.4	34.7	35.9	46.8	47.9	49.2	50.5	51.6	2.3	3.7	5.8	44 49.16	0.04	11.50	9 45 0.70	13.07
	Lacaille 4074	21	8.2	10.4	11.7	22.5	23.7	25.0	26.3	27.4	37.9	39.3	41.5	50 24.90	0.03	11.50	9 50 36.43	10.71
	Lacaille 4089	22	9.1	11.4	12.7	23.7	24.8	26.2	27.6	28.7	39.5	41.0	43.2	52 26.17	0.03	11.49	9 52 37.69	10.61
	Lacaille 4106, (1st *)	†23	50.8	52.3	53.8	55.2	58.0	. .	6.0	8.7	10.0	11.3	12.8	55 31.89	0.31	11.49	9 55 43.69	10.68
	Lacaille 4106, (2d *)	†24	16.2	18.3	19.7	30.7	31.9	33.3	34.6	35.7	46.3	49.7	50.0	55 33.15	0.03	11.49	9 55 44.67	10.68
	32 Ursæ Majoris	25	18.7	23.6	26.6	50.1	52.6	55.6	58.5	0.8	24.0	27.1	31.7	7 55.39	+ 0.10	11.49	10 8 6.98	17.75
	B. A. C. 3521	26	. .	. .	. .	39.8	41.0	42.3	43.6	44.9	55.5	57.0	59.2	11 47.91	− 5.63	11.49	10 11 53.77	10.91
	Lacaille 4266	27	. .	. .	. .	. .	. .	. .	30.0	32.6	34.2	35.5	37.1	16 33.88	37.83	11.48	10 16 7.53	10.95
	γ Antliæ	28	. .	. .	. .	. .	. .	. .	3.2	5.8	7.3	8.5	10.2	18 7.00	− 37.86	11.48	10 17 40.62	10.97
	B. A. C. 3596	29	43.4	45.9	47.2	58.3	59.4	0.8	2.3	3.3	14.2	15.6	17.9	23 0.75	+ 0.03	11.48	10 23 12.26	11.05
	Lacaille 4324	30	0.4	2.7	4.0	15.0	16.1	17.4	18.8	19.9	30.5	32.0	34.3	25 17.37	0.03	11.48	10 25 28.88	11.13
	Lacaille 4360	31	11.8	14.1	15.4	26.0	27.3	28.6	29.9	31.0	41.4	42.9	45.1	29 28.50	+ 0.03	11.47	10 29 40.00	11.23
	l Leonis	†32	. .	. .	. .	. .	. .	. .	25.0	27.3	28.7	29.8	31.1	42 28.38	− 33.76	11.47	10 42 6.09	12.29
	α Cor. Borealis	33	27.6	29.8	31.2	42.0	43.1	44.5	45.8	46.9	57.6	59.0	1.3	28 44.44	+ 0.04	11.32	15 28 55.80	10.20
	* — 35° 42′	34	. .	. .	. .	0.4	1.7	3.0	4.5	5.6	. .	. .	. .	31 3.04	− 0.03	11.32	15 31 14.33	15.08
	* — 35° 19′.	35	16.5	19.1	20.6	32.5	33.7	35.1	36.5	37.8	49.4	50.8	53.3	33 35.03	+ 0.03	11.32	15 33 46.38	15.05
	Lacaille 6522	36	. .	. .	. .	53.5	54.9	56.5	58.0	59.1	11.2	12.6	15.2	39 2.62	− 6.23	11.32	15 39 7.71	15.31
	Moon II.	37	53.9	56.2	57.5	8.2	9.3	10.6	11.9	12.9	23.5	24.8	27.0	42 10.53	+ 0.03	11.31	15 42 21.87	. .
	Lacaille 6582	38	30.1	32.7	34.3	46.7	48.2	49.6	51.3	52.4	4.7	6.4	9.0	46 49.58	0.03	11.31	15 47 0.92	15.64
	δ Scorpii	39	. .	52.0	53.5	3.7	4.8	6.2	7.4	8.6	18.7	20.1	. .	52 6.11	0.01	11.31	15 52 17.43	13.73
	Lacaille 6695	40	57.3	0.1	1.6	14.0	15.2	16.8	18.3	19.8	31.8	33.2	35.8	59 16.72	+ 0.03	11.30	15 59 28.05	15.59
	* — 38° 44′.	41	. .	. .	. .	. .	. .	. .	54.6	57.7	59.1	0.5	2.4	59 58.86	− 42.47	11.30	15 59 27.69	16.00
	B. A. C. 5406	42	8.3	13.6	16.9	42.7	45.7	48.8	52.0	54.7	20.0	23.8	28.9	5 48.67	+ 0.11	11.30	16 6 0.08	− 2.77
8	λ Ursæ Minoris, S. P.	†43	. .	. .	. .	7.5	16.0	. .	. .	. .	. .	. .	. .	58 41.75	1 31.45	10.44	20 0 23.64	+ 209.76
	α Leonis	44	41.2	43.2	44.5	54.4	55.4	56.7	57.9	59.0	8.5	10.0	12.0	0 56.62	+ 0.02	10.40	10 1 7.04	− 12.26
	Lacaille 4345	45	. .	. .	. .	. .	. .	. .	59.4	2.3	4.0	5.3	7.3	28 3.66	− 42.91	10.39	10 27 31.14	10.77
	Lacaille 4387	46	37.9	40.3	41.8	53.8	55.0	56.6	58.1	59.2	11.0	12.5	15.0	32 56.47	+ 0.07	10.39	10 33 6.93	10.98
	Lacaille 4399	47	. .	. .	. .	. .	. .	. .	5.5	8.3	9.8	11.3	12.8	35 9.54	− 40.42	10.39	10 34 39.51	11.05
	Lacaille 4407	48	. .	. .	. .	. .	. .	. .	43.9	46.7	48.2	49.5	51.4	35 47.94	− 40.41	10.39	10 35 17.92	11.06
	l Leonis	49	40.3	42.5	43.7	53.4	54.5	55.7	56.9	58.0	7.5	8.9	10.9	41 55.66	+ 0.02	10.39	10 42 6.07	12.27
	Lacaille 4503	50	. .	. .	. .	40.6	42.0	43.6	45.2	46.5	. .	. .	. .	46 43.58	0.01	10.39	10 46 53.98	11.18
	χ Leonis	51	34.3	36.2	37.4	47.0	48.2	49.3	50.5	51.6	1.2	2.4	4.3	57 49.31	0.03	10.38	10 57 59.72	12.11
9	Sun I	52	54.7	56.7	57.8	7.6	8.7	9.8	10.9	12.1	21.6	22.9	24.9	10 9.79	0.03	10.05	1 10 19.87	. .
Y.	Sun II	53	4.0	6.0	7.1	16.9	18.0	19.0	20.2	21.3	30.9	32.2	34.3	12 19.08	+ 0.03	10.05	1 12 29.16	. .
	Polaris	54	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.0	32 29.00	− 24 10.36	+10.05	1 8 28.69	− 24.27

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 6, 11.3	+ 11.45	− 0.031	+ 0.032
8, 10.6	+ 10.39	− 0.020	. .

23–24. Angle 310°.
32. Hardly visible; unreliable.
43. Cloudy.

April 6. n. = + 0.010 s.
8. — 0.040.

April 6. Thin clouds continually forming and dissolving. Estimates of magnitude may be too small in consequence.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
April 9	α Arietis	1	. .	. .	. .	. .	. .	. .	50. 4	52. 9	54. 2	55. 4	57. 1	59 54. 00	— 35. 95	+10. 05	1 59 28. 10	— 10. 78
	Lacaille 4162	2	57. 3	0. 0	1. 5	13. 0	14. 4	15. 7	17. 2	18. 4	29. 9	31. 4	33. 8	2 15. 69	+ 0. 07	10. 12	10 2 25. 88	10. 47
	Lacaille 4185	3	19. 0	21. 4	23. 0	34. 5	35. 9	37. 4	38. 6	39. 8	51. 2	52. 7	55. 2	5 37. 15	0. 07	10. 12	10 5 47. 34	10. 56
Y.	B. A. C. 3497	4	. .	. .	. .	. .	. .	. .	27. 7	30. 6	32. 3	33. 6	35. 7	8 31. 98	— 42. 99	10. 12	10 7 59. 11	10. 34
	B. A. C. 3498	5	. .	. .	. .	56. 1	57. 3	58. 8	59. 6	1. 8	13. 8	15. 7	18. 3	8 5. 18	— 6. 39	10. 12	10 8 8. 91	10. 34
	γ¹ Leonis	6	1. 6	3. 6	4. 9	15. 2	16. 4	17. 6	18. 7	19. 9	30. 0	31. 4	33. 6	12 17. 54	+ 0. 02	10. 11	10 12 27. 67	12. 72
	γ² Leonis	7	38. 9	40. 4	41. 8	43. 0	45. 5	. .	49. 7	52. 2	53. 5	54. 7	56. 4	12 17. 61	0. 29	10. 11	10 12 28. 01	12. 66
	B. A. C. 3557	8	3. 2	6. 0	7. 3	19. 3	20. 8	22. 3	23. 8	25. 2	37. 0	38. 6	41. 0	17 22. 23	0. 07	10. 11	10 17 32. 41	10. 63
	Lacaille 4295	9	58. 8	1. 8	3. 0	15. 6	16. 9	18. 4	20. 1	21. 3	33. 2	35. 2	37. 6	20 18. 35	0. 07	10. 11	10 20 28. 53	10. 64
	Lacaille 4326	10	53. 4	56. 0	57. 2	8. 9	10. 3	11. 7	13. 1	14. 3	25. 8	27. 5	29. 7	25 11. 63	0. 07	10. 10	10 25 21. 80	10. 88
	Lacaille 4349	11	3. 8	6. 2	7. 4	18. 6	20. 0	21. 3	22. 7	23. 9	34. 8	36. 4	38. 7	28 21. 25	0. 06	10. 10	10 28 31. 41	11. 05
	Lacaille 4374	12	2. 9	5. 4	6. 8	18. 5	19. 8	21. 4	22. 8	24. 0	35. 5	37. 0	39. 4	31 21. 23	0. 07	10. 10	10 31 31. 40	10. 98
	Lacaille 4389	13	9. 0	11. 7	13. 2	24. 5	25. 7	27. 2	28. 7	29. 8	41. 1	42. 8	45. 0	33 27. 15	0. 06	10. 10	10 33 37. 31	11. 07
	B. A. C. 3677	14	57. 4	0. 0	1. 2	12. 8	14. 0	15. 3	16. 7	18. 7	29. 0	30. 4	32. 8	36 15. 30	0. 06	10. 10	10 36 25. 46	11. 14
	Lacaille 4438	15	. .	. .	. .	16. 0	17. 4	18. 6	20. 4	21. 6	. .	. .	. .	38 18. 80	0. 01	10. 10	10 38 28. 91	11. 05
	O. Arg. S. 10887	16	18. 9	20. 5	22. 1	23. 4	26. 2	. .	36. 3	38. 9	40. 2	41. 5	43. 3	41 1. 13	0. 35	10. 09	10 41 11. 57	11. 25
	Lacaille 4463	17	59. 6	1. 0	2. 5	4. 0	6. 8	. .	16. 7	19. 6	21. 0	22. 4	24. 0	41 41. 76	0. 35	10. 09	10 41 52. 20	11. 26
	Lacaille 4488	18	. .	. .	. .	54. 3	55. 4	56. 8	58. 4	59. 4	. .	. .	. .	43 56. 86	0. 01	10. 09	10 44 6. 96	11. 25
	Lacaille 4498	19	13. 8	16. 2	17. 8	29. 5	30. 7	32. 2	33. 6	34. 9	46. 4	48. 0	50. 3	46 32. 13	0. 07	10. 09	10 46 42. 29	11. 26
	* — 31° 4′	20	. .	. .	. .	32. 6	33. 9	35. 3	36. 6	37. 8	. .	. .	. .	48 35. 24	0. 00	10. 09	10 48 45. 33	11. 37
	Lacaille 4519	21	58. 2	0. 6	1. 9	13. 1	14. 4	15. 9	17. 0	18. 3	29. 4	30. 8	33. 1	49 15. 70	0. 06	10. 09	10 49 25. 85	11. 38
	B. A. C. 3774	22	46. 1	48. 5	49. 8	1. 1	2. 2	3. 6	5. 2	6. 2	17. 3	18. 8	21. 2	54 3. 64	0. 06	10. 08	10 54 13. 78	11. 46
	B. A. C. 3783	23	19. 8	22. 3	23. 6	35. 0	36. 3	37. 6	39. 0	40. 2	51. 2	52. 6	54. 9	56 37. 50	0. 06	10. 08	10 56 47. 64	11. 50
	Lacaille 4599	24	11. 3	13. 9	15. 2	26. 5	27. 9	29. 0	30. 4	31. 7	42. 8	44. 4	46. 6	0 29. 06	0. 06	10. 08	11 0 39. 20	11. 55
	Lacaille 4633	25	35. 7	38. 2	39. 5	50. 8	52. 1	53. 5	54. 9	56. 1	7. 2	8. 8	11. 0	3 53. 44	0. 06	10. 08	11 4 3. 58	11. 61
	δ Leonis	26	25. 7	28. 0	29. 3	39. 5	40. 8	42. 0	43. 2	44. 3	54. 5	55. 9	57. 9	6 41. 92	0. 02	10. 07	11 6 52. 01	12. 52
	Lacaille 4665	27	2. 8	5. 2	6. 6	18. 1	19. 5	20. 8	22. 1	23. 5	34. 5	36. 0	38. 5	8 20. 69	0. 06	10. 07	11 8 30. 82	11. 67
	δ Crateris	28	7. 0	9. 1	10. 2	20. 1	21. 2	22. 4	23. 6	24. 7	34. 5	35. 7	37. 8	12 22. 39	0. 04	10. 07	11 12 32. 50	11. 88
	Lacaille 4713	29	6. 8	9. 4	10. 8	22. 5	23. 8	25. 2	26. 6	28. 0	39. 3	41. 0	43. 4	14 25. 16	0. 07	10. 07	11 14 35. 30	11. 77
	Lacaille 4735	30	26. 0	28. 4	30. 0	41. 4	42. 7	44. 2	45. 5	46. 7	58. 2	59. 8	2. 0	17 44. 08	0. 07	10. 06	11 17 54. 21	11. 83
	Lacaille 4753	31	51. 9	54. 4	55. 8	7. 5	8. 8	10. 3	11. 6	13. 0	24. 4	26. 0	28. 5	21 10. 20	0. 07	10. 06	11 21 20. 33	11. 89
	Lacaille 4766	32	37. 6	40. 4	41. 8	54. 1	55. 4	57. 0	58. 4	59. 8	11. 8	13. 6	16. 0	23 56. 90	0. 07	10. 06	11 24 7. 03	11. 95
	Lacaille 4802	33	24. 4	26. 9	28. 3	40. 1	41. 4	42. 9	44. 4	45. 5	57. 0	58. 7	1. 1	29 42. 79	0. 07	10. 06	11 29 52. 92	12. 04
	Lacaille 4825	34	36. 5	39. 3	40. 8	53. 4	54. 7	56. 2	57. 7	59. 0	11. 2	13. 0	15. 7	31 56. 14	0. 07	10. 06	11 32 6. 27	12. 11
	Lacaille 4849	35	9. 3	11. 8	13. 2	24. 9	26. 2	27. 8	29. 1	30. 3	41. 7	43. 4	45. 9	34 27. 60	0. 07	10. 05	11 34 37. 72	12. 12
	Lacaille 4877	36	10. 0	12. 8	14. 3	26. 8	28. 2	29. 7	31. 2	32. 6	44. 8	46. 5	49. 0	38 29. 63	0. 08	10. 05	11 38 39. 76	12. 25
	B. A. C. 3988	37	33. 1	35. 8	37. 4	50. 1	51. 4	53. 0	54. 4	55. 6	7. 9	9. 4	12. 3	39 52. 76	0. 08	10. 05	11 40 2. 89	12. 28
	Lacaille 4906	38	24. 6	27. 0	28. 3	39. 7	41. 0	42. 5	43. 9	44. 9	56. 2	57. 6	0. 0	43 42. 34	0. 06	10. 04	11 43 52. 44	12. 26
	* + 1° 6′	†39	41. 7	43. 7	44. 8	. .	55. 6	56. 7	57. 8	. .	8. 5	9. 6	12. 0	46 56. 71	0. 04	10. 04	11 47 6. 79	12. 16
	Weisse 895	40	11. 3	13. 3	14. 4	24. 3	25. 3	26. 5	27. 7	28. 6	38. 1	39. 3	41. 2	52 26. 36	+ 0. 03	10. 04	11 52 36. 43	12. 17
	Lacaille 4979	41	. .	. .	. .	55. 4	56. 9	59. 2	17. 2	19. 9	21. 5	22. 8	24. 5	55 12. 18	— 30. 86	10. 04	11 54 51. 36	12. 46
	Weisse 980	42	10. 5	12. 0	13. 3	14. 5	16. 9	. .	. .	. .	. .	. .	. .	57 13. 44	+ 34. 15	10. 04	11 57 57. 63	12. 17
	o Virginis	43	51. 4	53. 5	54. 7	4. 4	5. 5	6. 6	7. 9	8. 8	18. 5	19. 8	21. 7	58 6. 62	0. 03	10. 03	11 58 16. 68	12. 12
	B. A. C. 4088	44	51. 5	54. 0	55. 5	7. 0	8. 3	9. 7	11. 2	12. 3	23. 7	25. 4	27. 7	1 9. 66	0. 07	10. 03	12 1 19. 76	12. 57
	B. A. C. 4098	45	2. 4	5. 0	6. 4	18. 4	19. 8	21. 3	22. 8	24. 1	35. 8	37. 6	40. 0	3 21. 24	0. 07	10. 03	12 3 31. 34	12. 68
	Saturn I	46	21. 5	22. 8	24. 1	25. 4	27. 8	. .	27. 9	30. 3	31. 5	32. 5	34. 0	6 57. 78	0. 28	10. 03	12 7 8. 09	. .
	Saturn II	47	44. 2	46. 1	47. 5	57. 2	58. 2	59. 2	0. 4	1. 5	11. 2	12. 3	14. 2	6 59. 27	0. 03	10. 03	12 7 9. 33	. .
	Lacaille 5088	48	13. 3	15. 9	17. 2	29. 1	30. 4	31. 9	33. 4	34. 6	46. 2	47. 7	50. 1	10 31. 79	0. 06	10. 03	12 10 41. 88	12. 76
	Lacaille 5109	49	26. 3	28. 9	30. 5	43. 3	45. 0	46. 3	48. 2	49. 3	2. 0	3. 8	6. 5	13 46. 37	0. 08	10. 02	12 13 56. 47	13. 04
	B. A. C. 4175	50	5. 8	8. 4	9. 8	22. 1	23. 5	24. 9	26. 4	27. 8	39. 8	41. 6	44. 0	16 24. 92	0. 07	10. 02	12 16 35. 01	12. 95
	B. A. C. 4192	51	14. 5	16. 9	18. 1	29. 8	30. 8	32. 2	33. 4	34. 7	46. 0	47. 5	49. 9	19 32. 16	0. 06	10. 02	12 19 42. 24	12. 81
	Lacaille 5176	52	25. 3	27. 8	29. 1	40. 3	41. 5	42. 9	44. 4	45. 5	56. 6	58. 1	0. 4	22 42. 90	0. 06	10. 02	12 22 52. 98	12. 83
	Lacaille 5193	53	55. 4	57. 8	59. 1	10. 5	11. 9	13. 2	14. 5	15. 8	27. 0	28. 4	30. 8	25 13. 13	0. 06	10. 01	12 25 23. 20	12. 88
	β Corvi	54	48. 6	50. 9	52. 0	2. 6	3. 8	5. 0	6. 3	7. 5	17. 6	19. 0	21. 1	27 4. 95	+ 0. 05	10. 01	12 27 15. 01	12. 63
	Polaris, S. P.	†55	23. 0	2. 0	14. 0	43. 0	. .	15. 0	. .	48. 0	20. 0	32. 0	12. 0	8 16. 55	— 0. 22	+ 9. 98	1 8 26. 31	— 24. 31

39. Faint.
55. Unsteady.

April 9. n. = — $\overset{s.}{0}$. 040.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 9, 3. 2	+ 10. 05	0. 000	+ 0. 032
9, 15. 4	+ 9. 88	— 0. 045	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. April 9	Jupiter I . . .	1	59.4	0.7	2.1	3.3	5.9	. .	6.4	8.6	10.0	11.1	12.4	26 35.99	+ 0.28	+ 9.97	13 26 46.24	. .
	Jupiter II . . .	2	24.0	26.1	27.4	37.1	38.2	39.2	40.5	41.4	51.1	52.0	54.2	26 39.20	0.03	9.97	13 26 49.20	. .
	Lacaille 5613 . .	3	18.5	21.2	23.0	. .	. .	. .	. .	. .	51.1	52.7	55.0	29 36.92	0.12	9.97	13 29 47.01	— 13.90
Y.	Lacaille 5615 . .	4	32.5	34.9	36.5	. .	. .	. .	. .	. .	4.8	6.5	8.8	29 50.67	0.12	9.97	13 30 0.76	13.90
	Lacaille 5636 . .	5	. .	. .	. .	30.3	31.4	32.8	34.1	35.3	. .	. .	. .	32 32.78	0.01	9.96	13 32 42.75	13.89
	Lacaille 5649 . .	†6	4.9	7.2	8.6	20.3	21.4	22.9	24.1	25.5	36.8	38.4	40.7	34 22.80	0.07	9.96	13 34 32.83	13.89
	Lacaille 5665 . .	7	7.4	10.0	11.5	23.0	24.4	25.8	27.3	28.6	40.3	41.7	44.2	37 25.84	0.07	9.96	13 37 35.87	14.06
	Lacaille 5680 . .	8	14.9	17.5	18.9	31.0	32.2	33.8	35.1	36.4	48.3	49.8	52.3	40 33.65	0.07	9.96	13 40 43.68	14.20
	B. A. C. 4620 . .	9	11.3	13.9	15.2	27.4	28.5	30.0	31.4	32.7	44.5	45.8	48.3	43 29.91	0.07	9.96	13 43 39.94	14.18
	Lacaille 5729 . .	10	30.6	33.2	34.7	46.1	47.4	49.0	50.4	51.6	3.0	4.6	7.2	45 48.89	0.07	9.95	13 45 58.91	14.12
	Lacaille 5758 . .	11	9.3	11.9	13.3	25.5	26.8	28.2	29.7	31.0	43.0	44.6	47.0	48 28.21	0.07	9.95	13 48 38.23	14.39
	Weisse 931 . .	12	52.3	53.5	54.9	56.1	58.6	. .	58.5	. .	2.0	3.3	4.5	54 24.86	3.88	9.95	13 54 38.69	12.16
	τ Virginis	13	18.5	20.6	21.8	31.5	32.4	33.6	34.7	35.8	45.2	46.5	48.6	54 33.56	0.03	9.95	13 54 43.54	12.18
	Lacaille 7395 . .	14	. .	. .	. .	48.1	49.2	50.6	52.2	53.4	. .	. .	. .	32 50.70	0.01	9.79	17 33 0.50	14.88
	Lacaille 7414 . .	15	25.7	28.0	29.4	41.2	42.5	43.9	45.5	46.8	58.2	0.0	2.5	35 43.97	0.07	9.78	17 35 53.82	15.13
	Lacaille 7430 . .	16	16.9	19.4	20.7	32.4	33.5	35.3	36.7	37.9	49.3	50.6	53.1	38 35.07	0.07	9.78	17 38 44.92	14.96
	Lacaille 7459 . .	17	24.5	26.9	28.2	40.0	41.0	. .	43.8	45.0	56.6	58.0	0.3	41 42.43	0.08	9.78	17 41 52.29	14.87
	B. A. C. 6059 . .	18	. .	. .	. .	41.9	42.8	44.0	45.5	46.6	. .	. .	. .	47 44.16	0.00	9.77	17 47 53.93	14.01
	4 Sagittarii . . .	19	2.0	4.4	5.6	16.1	17.3	18.6	19.8	21.0	31.3	32.7	34.9	51 18.52	0.05	9.77	17 51 28.34	13.73
	O. Arg. S. 17490 .	20	3.6	5.7	7.1	17.8	18.9	20.0	21.4	22.5	33.0	34.4	36.4	53 20.07	0.05	9.77	17 53 29.89	13.71
	O. Arg. S. 17510 .	21	51.5	53.6	54.8	5.5	6.6	8.0	9.3	10.4	20.6	21.8	24.1	54 7.84	0.05	9.77	17 54 17.66	13.71
	9 Sagittarii . . .	22	4.4	6.7	8.2	19.1	20.1	21.4	22.5	23.7	33.7	35.4	37.5	55 21.15	0.05	9.77	17 55 30.97	13.71
	O. Arg. S. 17540 .	23	45.8	47.1	48.6	49.9	52.8	. .	58.6	1.1	2.5	3.7	5.2	55 25.53	0.32	9.77	17 55 35.62	13.71
	B. A. C. 6111 . .	24	22.6	24.9	26.3	36.6	37.8	39.1	40.6	41.8	52.0	53.5	55.6	56 39.16	0.05	9.77	17 56 48.98	13.71
	B. A. C. 6130 . .	25	43.3	45.6	46.9	58.2	59.3	0.7	2.0	3.3	14.1	15.5	17.9	0 0.62	0.06	9.76	18 0 10.44	14.31
	μ Sagittarii . . .	26	10.8	13.0	14.3	24.7	25.7	27.0	28.2	29.3	39.5	40.8	42.9	5 26.93	0.05	9.76	18 5 36.74	13.32
	B. A. C. 6199 . .	27	. .	. .	. .	3.4	4.5	5.8	7.2	8.3	. .	. .	. .	10 5.84	0.00	9.76	18 10 15.60	13.76
	δ Sagittarii . . .	28	49.0	51.1	52.8	3.7	5.0	6.4	7.7	8.9	19.7	21.4	23.6	12 6.30	+ 0.06	9.75	18 12 16.11	— 14.22
	δ Ursæ Minoris . .	29	. .	. .	. .	41.0	59.0	19.0	39.0	56.0	. .	. .	. .	16 18.80	— 0.92	9.75	18 16 27.63	+ 62.73
	λ Sagittarii . . .	30	7.1	9.3	10.5	21.2	22.3	23.7	25.0	26.2	36.6	38.1	40.2	19 23.65	+ 0.05	9.75	18 19 33.45	— 13.69
	1 Aquilæ	31	22.3	24.5	25.7	35.3	36.4	37.7	38.8	39.8	49.3	50.8	52.8	27 37.58	0.04	9.74	18 27 47.36	12.01
	Bradley 2333 . .	32	46.9	49.2	50.4	1.0	2.0	3.4	4.6	5.8	16.2	17.6	19.6	30 3.34	0.05	9.74	18 30 13.13	13.41
	51 (Hev.) Cephei, S. P.	33	. .	. .	. .	57.0	36.0	. .	44.5	24.5	. .	. .	. .	35 10.50	1.14	9.74	6 35 21.38	102.75
	29 Sagittarii . . .	34	8.7	10.8	12.2	22.4	23.5	24.7	26.0	27.2	37.3	38.5	40.7	41 24.73	0.05	9.73	18 41 34.51	13.02
	ν^1 Sagittarii . . .	35	30.0	32.2	33.4	43.9	45.2	46.4	47.7	48.7	59.1	0.5	2.7	45 46.35	0.05	9.73	18 45 56.13	13.22
	ξ^2 Sagittarii . . .	36	9.6	11.8	13.1	23.5	24.6	25.9	27.2	28.3	38.4	39.7	41.9	49 25.82	0.05	9.73	18 49 35.60	13.03
	Moon II . . .	37	3.5	5.8	7.2	17.9	18.9	20.3	21.5	22.7	33.0	34.5	36.7	52 20.18	0.05	9.73	18 52 29.96	. .
	δ Aquilæ	38	12.4	14.6	15.6	25.4	26.4	27.5	28.7	29.8	39.4	40.4	42.4	18 27.51	0.03	9.70	19 18 37.24	10.88
	γ Aquilæ	39	21.3	23.5	24.6	34.5	35.5	36.7	37.9	38.8	48.5	49.9	51.9	39 36.65	0.03	9.69	19 39 46.37	10.17
	α Aquilæ	40	42.7	44.7	45.9	55.7	56.7	57.8	59.0	0.1	9.6	11.0	13.0	43 57.84	0.03	9.68	19 44 7.55	10.41
N.	ζ Pegasi	41	13.7	15.8	17.0	26.8	27.8	29.1	30.3	31.4	40.9	42.2	44.2	34 29.02	0.05	9.58	22 34 38.65	9.82
	α Andromedæ . .	42	43.5	45.8	47.1	7.1	8.4	9.7	11.0	12.1	22.0	23.4	25.7	1 9.62	0.09	9.59	0 1 19.28	9.83
10	Sun I	43	35.1	37.1	38.4	48.2	49.1	50.2	51.5	. .	2.1	3.4	5.3	13 50.04	0.28	9.56	1 13 59.88	. .
	Sun II	44	44.3	46.5	47.7	57.3	58.5	59.6	0.9	1.8	11.4	12.7	14.8	15 59.59	+ 0.05	9.56	1 16 9.20	. .
	Polaris	†45	. .	. .	. .	. .	. .	. .	21.5	53.0	41.0	30.0	. .	30 6.37	— 21 48.30	9.56	1 8 27.63	— 24.37
	Venus I	46	46.0	47.9	48.4	59.5	0.4	1.7	3.1	4.2	14.0	15.4	17.5	6 1.65	+ 0.06	9.54	3 6 11.25	+ 0.43
	α Persei	47	1.6	4.6	6.5	21.3	22.8	24.9	26.7	28.0	42.5	44.7	47.4	14 24.64	+ 0.16	9.54	3 14 34.34	— 13.60
	η Tauri	48	. .	. .	. .	24.9	26.3	28.4	44.6	47.2	48.5	49.8	51.3	39 40.12	— 27.96	9.53	3 39 21.69	— 11.62
	α Tauri	49	39.6	41.8	43.0	53.0	54.0	55.3	56.6	57.7	7.4	8.9	10.8	27 55.28	+ 0.06	9.53	4 28 4.87	— 11.40
	λ Ursæ Minoris, S. P.	†50	. .	. .	. .	15.5	21.0	19.5	17.0	25.5	. .	. .	. .	0 19.70	— 4.10	9.49	20 0 25.09	+ 207.48
	B. A. C. 2787 . .	51	46.2	13.8	27.5	31.7	45.0	0.5	15.8	29.0	30.0	47.0	11.0	14 59.77	+ 1.61	9.49	8 15 10.87	— 63.86
	η Cancri	52	23.5	25.7	26.9	37.4	38.4	39.6	40.9	42.1	52.1	53.5	55.6	24 39.61	+ 0.07	9.49	8 24 49.17	12.75
	Lacaille 3399 . .	53	37.3	39.6	41.1	52.4	53.7	55.1	56.5	57.7	8.8	10.5	12.7	28 55.04	— 0.02	9.49	8 29 4.51	9.07
	Lacaille 3434 . .	54	38.2	40.5	41.8	53.5	54.6	56.1	57.5	58.7	10.1	11.5	13.8	31 56.03	0.02	9.49	8 32 5.50	9.02
	Lacaille 3459 . .	55	58.4	0.9	2.3	13.8	15.1	16.5	17.9	19.1	30.3	32.0	34.4	34 16.43	— 0.02	+ 9.49	8 34 25.90	— 9.03

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 9, 15.4	+ 9.88	— 0.045	+ 0.032
10, 8.5	+ 9.49	— 0.009	. .

6. Close double; A. R. nearly same.
45. Very unsteady; first wire best; gradually growing worse.
50. Good observation.

April 9–10. n. = + 0.094 s.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. April 10	Lacaille 3469 . .	1	14.4	16.8	18.1	29.5	30.6	32.0	33.5	34.6	45.7	47.3	49.6	36 32.01	− 0.02	+ 9.49	8 36 41.48	− 9.21
	Lacaille 3509 . .	2	53.6	55.9	57.3	8.1	9.0	10.4	11.8	13.0	23.5	24.9	27.2	40 10.43	0.01	9.49	8 40 19.91	9.70
	Lacaille 3529 . .	3	3.7	6.0	7.4	18.3	19.5	20.8	22.2	23.4	34.3	35.5	37.8	42 20.81	0.01	9.49	8 42 30.29	9.58
N.	B. A. C. 3007 . .	4	10.0	12.4	13.7	24.6	25.7	27.1	28.5	29.6	40.2	41.7	44.0	44 27.05	0.01	9.49	8 44 36.53	9 61
	d Mali	5	14.7	17.0	18.3	29.1	30.4	31.7	33.1	34.2	44.7	46.1	48.5	49 31.62	0.01	9.49	8 49 41.10	9.75
	Lacaille 3607 . .	6	16.4	18.6	20.0	30.7	31.9	33.4	34.6	35.8	46.4	47.7	50.1	51 33.24	0.01	9.49	8 51 42.72	9.77
	Lacaille 3629 .	7	26.5	28.7	30.0	40.9	42.1	43.4	44.7	45.9	56.5	58.0	0.2	53 43.35	0.01	9.49	8 53 52.83	9.75
	B. A. C. 3082 . .	8	. .	. .	. .	20.7	22.1	24.3	40.9	43.4	44.9	46.2	47.6	55 36.26	− 28.61	9.49	8 55 17.14	9.89
	κ Cancri	9	57.0	59.0	0.2	10.1	11.1	12.4	13.5	14.6	24.1	25.5	27.4	0 12.26	+ 0.05	9.49	9 0 21.80	12.14
	B. A. C. 3121 . .	10	38.2	40.5	41.8	52.4	53.6	54.9	56.3	57.5	7.9	9.2	11.5	1 54.89	− 0.01	9.49	9 2 4.37	10.03
	Lacaille 3690 . .	11	15.5	17.7	19.0	29.8	31.0	32.2	33.5	34.6	45.0	46.4	48.6	2 32.12	0.01	9.49	9 2 41.60	10.04
	B. A. C. 3127 . .	12	. .	. .	. .	50.5	52.0	54.2	10.6	13.3	14.5	15.8	17.3	4 6.02	28.39	9.48	9 3 47.11	10.06
	Lacaille 3733 . .	13	. .	15.4	16.7	28.2	29.4	30.7	32.2	33.2	44.6	45.9	. .	8 30.70	− 0.03	9.48	9 8 40.15	9.68
	1 (Hev.) Draconis	†14	54.4	3.3	12.8	21.6	38.6	. .	46.5	2.7	11.3	19.6	29.6	17 13.03	+ 1.74	9.48	9 17 24.25	36.12
		†15	27.0	41.1	49.5	58.6	5.9	14.3	22.8	30.1	37.2	46.5	0.0					
	10 Leonis	16	36.3	38.4	39.6	49.3	50.4	51.6	52.8	53.8	3.3	4.6	6.6	29 51.52	0.05	9.48	9 30 1.05	12.01
	ο Leonis	17	27.8	30.0	31.1	40.9	42.0	43.2	44.4	45.5	55.0	56.4	58.3	33 43.15	0.05	9.48	9 33 52.68	12.18
	ε Leonis	18	40.7	42.9	44.3	54.8	55.9	57.3	58.7	59.7	10.0	11.5	13.7	37 57.23	0.08	9.48	9 38 6.79	12.94
	32 Ursæ Majoris . .	19	20.4	25.3	28.2	51.7	54.3	57.1	0.1	2.5	25.5	28.7	33.4	7 56.98	0.29	9.48	10 8 6.75	17.61
	γ^1 Leonis	20	2.0	4.2	5.4	15.8	16.8	18.1	19.5	20.6	30.6	32.0	34.0	12 18.09	0.07	9.47	10 12 27.63	12.71
	γ^2 Leonis	21	39.4	40.7	42.2	43.5	46.1	. .	50.3	52.7	54.0	55.2	56.7	12 18.08	0.34	9.47	10 12 27.89	12.64
	ε Corvi	22	42.6	44.8	46.0	56.3	57.5	58.7	0.1	1.2	11.3	12.8	14.8	2 58.74	0.00	9.46	12 3 8.20	12.38
	Saturn I	23	6.4	7.7	9.1	10.3	12.8	. .	12.8	15.1	16.3	17.5	19.0	6 42.70	0.28	9.46	12 6 52.44	. .
	Saturn II	24	29.0	31.1	32.3	41.9	43.0	44.2	45.4	46.5	55.7	57.0	59.0	6 44.19	0.03	9.46	12 6 53.68	. .
	θ Virginis	25	30.1	32.2	33.4	43.1	44.0	45.3	46.5	47.5	56.9	58.2	0.2	2 45.22	+ 0.02	9.45	13 2 54.69	12.39
	Polaris, S. P. . .	26	. .	. .	-	52.5	10.0	22.0	32.0	54.0	. .	. .	. .	8 22.10	− 3.20	9.45	13 8 28.35	24.32
	Lacaille 5502 . .	27	. .	. .	. .	17.8	19.3	21.8	40.7	43.4	45.1	46.5	48.4	14 35.38	− 32.67	9.45	13 14 12.16	13.95
	Jupiter I . . .	28	31.4	32.8	34.1	35.3	37.6	. .	38.3	40.5	41.7	42.9	44.3	26 7.89	+ 0.30	9.45	13 26 17.64	. .
	Jupiter II . . .	29	56.0	58.0	59.2	9.0	10.0	11.1	12.4	13.4	22.9	24.2	26.2	26 11.13	0.05	9.45	13 26 20.63	. .
	ζ Virginis . . .	30	21.4	23.5	24.6	34.2	35.3	36.4	37.7	38.8	48.2	49.5	51.5	27 36.46	0.03	9.45	13 27 45.94	12.21
	α Aquilæ	31	43.0	45.0	46.2	55.9	56.9	58.2	59.4	0.4	10.0	11.2	13.2	43 58.13	0.05	9.39	19 44 7.57	− 10.44
	ε Draconis . . .	32	43.7	49.5	53.0	21.0	24.1	27.8	31.2	34.1	1.5	5.3	11.0	48 27.47	0.35	9.39	19 48 37.21	+ 0.15
	Moon II . . .	33	47.5	49.8	50.9	1.4	2.6	3.7	5.0	6.2	16.4	17.7	19.9	53 3.74	0.00	9.39	19 53 13.13	. .
11	Sun I	†34	15.3	17.4	18.5	28.3	29.3	30.5	31.8	32.7	42.3	43.7	45.6	17 30.49	0.06	9.36	1 17 39.91	. .
Y.	Sun II	†35	24.9	26.8	28.0	37.8	38.9	40.1	41.3	42.2	51.8	53.2	55.1	19 40.01	0.06	9.36	1 19 49.43	. .
	γ^1 Leonis . . .	36	2.1	4.3	5.5	15.9	17.0	18.1	19.5	20.6	30.8	32.1	34.1	12 18.18	0.10	9.39	10 12 27.67	− 12.69
	B. Z. 501, 35 . .	37	49.2	51.6	53.0	4.4	5.5	7.0	8.4	9.5	20.6	22.3	24.5	15 6.91	0.15	9.39	10 15 16.45	13.17
	35 Ursæ Majoris . .	38	. .	. .	. .	57.0	59.5	2.4	5.3	8.1	.	. .	. .	20 2.46	0.39	9.31	10 20 12.24	17.34
	B. Z 457, 12 . .	39	47.9	50.0	51.2	1.1	2.3	3.5	4.8	5.8	15.7	16.9	19.0	26 3.47	0.08	9.39	10 26 12.94	12.40
	38 Ursæ Majoris . .	40	50.3	55.4	58.5	22.4	25.1	28.0	31.1	33.8	57.3	0.8	5.4	32 28.01	0.82	9.38	10 32 37.91	16.94
	34 Sextantis . . .	41	11.2	13.2	14.4	24.0	25.2	26.2	27.5	28.5	38.0	39.2	41.1	35 26.23	0.05	9.38	10 35 35.66	12.04
	κ Leonis	42	47.5	49.6	50.9	0.8	1.9	3.1	4.3	5.5	15.2	16.5	18.4	39 3.06	0.08	9.38	10 39 12.52	12.36
	l Leonis	43	41.1	43.3	44.6	54.3	55.4	56.7	57.9	58.8	8.5	9.8	11.8	41 56.56	0.07	9.38	10 42 6.01	12.24
	44 Ursæ Majoris . .	44	42.8	46.4	48.6	5.3	7.2	9.4	11.4	13.2	29.7	32.3	35.4	45 9.24	0.31	9.38	10 45 18.93	14.63
	O. Arg. N. 11325 .	45	39.2	42.3	44.0	58.7	0.2	2.0	3.7	5.2	19.4	21.4	24.4	53 1.86	0.30	9.37	10 53 11.53	13.82
	χ Leonis	46	35.1	37.2	38.4	48.0	49.1	50.4	51.6	52.6	2.1	3.4	5.4	57 50.30	0.06	9.37	10 57 59.73	12.09
	ψ Ursæ Majoris . .	47	29.3	32.2	33.8	47.4	48.9	50.6	52.3	53.7	7.1	9.0	11.7	1 50.55	0.28	9.37	11 2 0.20	13.47
	p^5 Leonis	48	23.0	25.2	26.3	36.0	37.0	38.3	39.5	40.4	49.9	51.2	53.1	6 38.17	0.03	9.37	11 6 47.57	12.04
	Weisse 137 . . .	49	52.1	53.4	54.8	56.0	58.5	. .	58.6	0.9	2.2	3.3	4.7	9 28.45	0.27	9.37	11 9 38.09	12.00
	φ Leonis	50	20.0	22.2	23.3	33.0	34.1	35.3	36.5	37.5	47.0	48.2	50.1	9 35.20	+ 0.02	9.37	11 9 44.59	12.00
	δ Crateris	51	7.6	9.8	10.8	20.9	21.9	23.2	24.3	25.5	35.2	36.5	38.5	12 23.11	− 0.01	9.37	11 12 32.47	11.87
	ι Leonis . . .	52	24.9	27.0	28.2	38.0	39.2	40.4	41.5	42.6	52.2	53.5	55.5	16 40.27	+ 0.07	9.37	11 16 49.71	12.23
	83 Leonis	53	6.2	7.5	8.7	10.0	12.4	. .	12.6	14.9	16.1	17.3	18.6	19 42.43	0.29	9.36	11 19 52.08	12.12
	Gr. C. 954 . . .	54	28.6	30.6	31.8	41.4	42.5	43.7	44.9	45.9	55.4	56.6	58.7	19 43.65	0.04	9.36	11 19 53.05	12.12
	Weisse 446 . . .	55	6.0	8.1	9.3	19.0	20.1	21.3	22.4	23.4	33.0	34.4	36.4	26 21.22	+ 0.06	+ 9.36	11 26 30.64	− 12.18

14–15. Good observation.
34–35. Hazy; sun steady.

April 11, 14h. 10m. Image west $0^{\mathrm{r}}.32$. Clamp west.

April 11. n. $= + 0^{\mathrm{s}}.178$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 11, 14.0	+ 9.30	− 0.028	+ 0.032

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
April 11	59 Ursæ Majoris	1	34.6	37.5	39.0	52.6	54.0	55.8	57.4	58.8	12.0	13.9	16.6	30 55.57	+ 0.28	+ 9.36	11 31 5.21	− 12.95
	B. A. C. 3962	2	1.1	3.1	4.3	14.0	15.1	16.3	17.3	18.5	27.9	29.1	31.0	33 16.15	0.04	9.36	11 33 25.55	12.12
	Weisse 624	3	57.4	59.5	0.6	10.4	11.4	12.5	13.8	14.8	24.4	25.5	27.4	36 12.50	0.03	9.36	11 36 21.89	12.12
Y.	Weisse 662	4	0.0	2.0	3.3	13.0	14.0	15.2	16.4	17.4	26.9	28.2	30.2	38 15.15	0.06	9.36	11 38 24.57	12.17
	Lalande 22308	5	11.2	12.5	13.8	15.1	17.7	. .	. .	22.3	23.6	24.8	26.2	41 45.24	3.81	9.36	11 41 58.41	12.23
	β Leonis	6	42.0	44.1	45.5	55.4	56.5	57.7	58.9	0.0	9.8	11.1	13.1	41 57.65	0.08	9.36	11 42 7.09	12.12
	b Virginis	7	34.3	36.4	37.6	47.2	48.3	49.4	50.6	51.6	1.1	2.4	4.4	52 49.39	0.05	9.35	11 52 58.79	12.16
	Weisse 921	8	. .	. .	. .	51.4	52.6	53.8	55.1	56.1	. .	. .	. .	53 53.80	0.01	9.35	11 54 3.16	12.17
	Weisse 49	9	9.7	11.8	13.0	22.7	23.8	25.0	26.2	27.2	36.8	38.0	40.0	4 24.93	+ 0.06	9.35	12 4 34.34	12.16
	Saturn I	10	. .	. .	. .	25.2	26.3	27.5	28.8	29.8	. .	. .	. .	6 27.52	− 0.01	9.35	12 6 36.86	. .
	Saturn II	11	. .	. .	13.5	15.6	16.8	. .	40.3	41.5	43.6	. .	. .	6 28.55	+ 0.08	9.35	12 6 37.98	. .
	Weisse 144	12	. .	. .	. .	32.5	33.7	35.7	50.9	53.1	54.4	55.5	57.0	10 46.68	− 25.83	9.34	12 10 30.19	12.16
	Weisse 193	13	34.8	36.8	38.0	47.9	48.9	50.1	51.3	52.3	1.8	3.1	5.1	12 50.01	+ 0.05	9.34	12 12 59.40	12.16
	73 Ursæ Majoris	14	30.0	33.7	35.9	53.4	55.1	57.2	59.5	1.2	18.3	20.8	24.4	20 57.23	+ 0.37	9.34	12 21 6.94	12.25
	Weisse 402	15	. .	. .	. .	. .	. .	. .	59.7	2.0	3.3	4.5	5.8	25 3.06	− 33.23	9.34	12 24 39.17	12.28
	β Corvi	16	49.5	51.6	52.9	3.3	4.5	5.7	7.1	8.2	18.4	19.8	21.9	27 5.72	− 0.04	9.34	12 27 15.02	12.63
	Weisse 497	17	5.8	8.0	9.1	19.0	20.2	21.5	22.7	23.6	33.4	34.7	36.7	30 21.34	+ 0.08	9.34	12 30 30.76	12.07
	χ Virginis	18	. .	. .	. .	2.1	3.3	4.4	5.7	6.7	. .	. .	. .	32 4.44	− 0.04	9.34	12 32 13.74	12.35
	Polaris, S. P.	19	0.0	8.0	13.5	24.0	46.5	. .	19.0	47.5	58.0	11.5	12.0	8 25.91	− 8.41	9.32	1 8 26.82	24.40
		†20	32.0	11.0	23.0	54.5	11.5	25.0	35.0	55.0	34.0	42.0	22.0					
	Piazzi XIII, 219	21	6.8	8.2	9.6	11.0	13.6	. .	18.3	20.8	22.0	23.3	24.8	43 45.84	+ 0.38	9.31	13 43 55.53	11.47
	Piazzi XIII, 220	22	32.7	35.0	36.2	46.7	47.9	49.0	50.4	51.4	1.7	3.0	5.1	43 49.01	0.11	9.31	13 43 58.43	11.47
	η Bootis	23	47.3	49.5	50.7	0.8	2.0	3.2	4.5	5.6	15.5	16.9	19.0	48 3.18	0.10	9.30	13 48 12.58	11.54
	ζ Aquilæ	24	43.8	46.0	47.3	57.1	58.2	59.4	0.6	1.7	11.4	12.7	14.8	58 59.36	0.08	9.18	18 59 8.62	10.10
	γ Aquilæ	25	22.0	24.0	25.2	34.9	36.0	37.2	38.4	39.5	49.1	50.5	52.4	39 37.20	0.06	9.16	19 39 46.42	10.23
	α Aquilæ	26	43.1	45.1	46.5	56.2	57.2	58.4	59.6	0.7	10.2	11.5	13.4	43 58.35	0.06	9.16	19 44 7.57	10.47
	Moon II	†27	25.4	26.6	28.0	29.2	32.1	. .	35.6	37.6	39.0	40.4	41.6	51 3.67	+ 0.11	9.14	20 51 12.92	. .
		†28	47.9	49.9	51.3	1.5	2.8	4.0	5.0	6.1	16.1	17.5	19.5					
13	6 Cancri	29	. .	. .	. .	12.8	14.2	16.5	33.4	35.9	37.4	38.7	40.2	55 28.64	− 29.02	8.56	7 55 8.18	− 13.30
	λ Ursæ Minoris, S. P.	30	. .	. .	. .	22.0	28.0	24.0	20.0	29.0	. .	. .	.	0 24.60	− 4.25	8.56	20 0 28.91	+ 204.45
N.	Lacaille 3209	31	.1	.5	.8	.2	.4	.8	.2	.4	.4	.0	.3	. . .	0.00	8.55	. . . .	− 8.78
	Lacaille 3361	32	51.4	53.8	55.1	6.4	7.6	9.0	10.4	11.6	22.4	24.0	26.2	25 8.90	0.00	8.54	8 25 17.44	9.08
	f Mali	†33	37.6	39.9	41.2	52.4	53.4	54.5	56.2	57.2	8.2	9.4	11.9	33 54.72	+ 0.01	8.54	8 34 3.27	9.33
	Lacaille 3474	34	57.9	0.2	1.4	12.4	13.6	14.9	16.4	17.5	28.3	29.8	32.2	37 14.96	0.01	8.53	8 37 23.50	9.38
	Lacaille 3515	35	4.0	5.4	6.9	8.3	11.0	. .	19.8	22.6	23.9	25.3	26.9	40 45.41	0.15	8.53	8 40 54.09	9.41
	O. Arg. S. 8978	36	. .	32.0	33.4	44.7	45.8	47.2	48.7	49.7	0.3	2.0	. .	40 47.09	0.00	8.53	8 40 55.62	9.41
	d Mali	37	15.7	18.0	19.3	30.0	31.3	32.6	33.9	34.9	45.6	47.1	49.3	49 32.52	0.01	8.53	8 49 41.06	9.69
	Lacaille 3607	38	17.1	19.5	20.8	31.7	32.8	34.1	35.5	36.6	47.2	48.6	50.9	51 34.07	0.01	8.53	8 51 42.61	9.71
	Lacaille 3621	39	27.3	29.6	31.0	41.7	42.8	44.1	45.7	46.8	57.3	58.9	1.0	53 44.20	0.01	8.53	8 53 52.74	9.74
	σ² Ursæ Majoris	40	33.2	38.5	41.2	6.8	9.9	12.8	16.0	18.2	43.0	46.9	52.0	58 12.66	0.32	8.53	8 58 21.51	20.15
	Lacaille 3684	41	17.1	19.6	20.8	32.0	33.1	34.5	35.9	36.9	47.9	49.3	51.7	1 34.44	0.01	8.52	9 1 42.97	9.69
	B. A. C. 3127	42	22.0	24.1	25.5	36.1	37.4	38.6	39.9	40.9	51.4	52.9	55.0	3 38.53	0.01	8.52	9 3 47.06	10.01
	Lacaille 3716	43	0.4	2.7	3.9	14.7	15.9	17.1	18.5	19.5	29.9	31.4	33.6	6 17.05	0.01	8.52	9 6 25.58	10.06
	Lacaille 3739	44	50.2	52.6	53.9	5.0	6.2	7.6	8.9	10.0	21.0	22.4	24.8	9 7.51	+ 0.01	8.52	9 9 16.04	9.79
	83 Cancri	45	. .	. .	. .	11.4	12.5	13.7	14.9	15.9	26.0	27.2	29.5	11 18.89	− 5.17	8.52	9 11 22.24	12.52
	α Cephei, S. P.	46	42.2	38.0	35.6	15.1	12.8	10.0	7.6	5.2	45.3	42.5	38.4	15 10.25	− 0.25	8.51	21 15 18.51	4.26
	Lacaille 3807	47	30.4	32.9	34.1	45.8	47.0	48.4	49.7	51.0	2.1	3.6	6.0	17 48.27	0.00	8.51	9 17 56.78	9.74
	α Hydræ	48	30.0	32.0	33.1	42.9	44.0	45.1	46.4	47.6	56.9	58.3	0.3	20 45.15	+ 0.03	8.51	9 20 53.69	11.16
	Lacaille 3843	49	. .	. .	. .	22.9	24.0	25.3	26.6	27.8	38.3	39.6	41.8	22 30.79	− 5.48	8.51	9 22 33.82	10.28
	Lacaille 3857	50	15.7	18.0	19.3	29.8	31.0	32.5	33.7	34.7	45.1	46.6	48.8	23 32.29	+ 0.01	8.51	9 23 40.81	10.39
	Lacaille 3903	51	11.3	14.0	15.5	27.8	29.1	30.6	32.2	33.4	45.5	47.2	49.6	27 30.56	− 0.01	8.51	9 27 39.06	9.51
	Lacaille 3928	52	27.9	30.2	31.4	42.0	43.3	44.6	45.9	47.0	57.4	58.7	0.9	30 44.48	+ 0.01	8.50	9 30 52.99	10.40
	μ Leonis	53	35.3	37.5	38.6	49.7	50.8	52.3	53.4	54.6	5.1	6.5	8.8	44 52.05	0.09	8.50	9 45 0.64	12.95
	Lacaille 4058	54	32.5	34.8	36.2	46.9	48.2	49.5	50.8	52.0	2.6	4.2	6.3	47 49.45	0.01	8.49	9 47 57.95	10.50
	Lacaille 4074	55	11.0	13.3	14.7	25.4	26.5	27.9	29.1	30.2	40.8	42.3	44.5	50 27.79	+ 0.01	+ 8.49	9 50 36.29	− 10.61

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 13, 9.9	+ 8.49	− 0.035	+ 0.046

20. Steady; R. A. from 11 wires.
27–28. Faint.
33. Uncertain; field too dark.

April 3. n. = + 0.083 s.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. pril 13	Lacaille 4089 . .	1	. .	. .	. .	26. 6	27. 7	29. 2	30. 5	31. 6	. .	. .	.	52 29. 12	— 0. 04	+ 8. 49	9 52 37. 57	— 10. 54
	Lacaille 4111 . .	2	37. 8	40. 3	41. 7	53. 3	54. 4	55. 8	57. 4	58. 6	10. 0	11. 4	13. 8	55 55. 86	0. 00	8. 49	9 56 4. 35	10. 34
	* + 12° 38′ . . .	3	13. 1	15. 3	16. 7	28. 0	28. 8	30. 1	31. 6	32. 7	43. 2	44. 8	46. 9	58 30. 11	+ 0. 07	8. 49	9 58 38. 67	12. 27
N.	Lacaille 4134 . .	4	35. 9	38. 4	39. 6	50. 5	51. 7	53. 0	54. 4	55. 6	6. 1	7. 6	9. 7	58 52. 95	0. 01	8. 49	9 59 1. 45	10. 66
	α Leonis	5	42. 9	45. 0	46. 3	56. 2	57. 3	58. 5	59. 8	0. 7	10. 3	11. 6	13. 6	0 58. 38	0. 07	8. 49	10 1 6. 94	12. 21
	Lacaille 4183 . .	6	25. 1	27. 5	28. 7	39. 7	40. 8	42. 2	43. 6	44. 7	55. 5	56. 9	59. 1	5 42. 16	+ 0. 01	8. 48	10 5 50. 65	10. 68
	Lacaille 4245 . .	7	40. 9	43. 4	44. 8	56. 5	57. 6	59. 0	0. 6	1. 8	13. 2	14. 7	17. 0	12 59. 05	0. 00	8. 48	10 13 7. 53	10. 62
	B. A. C. 3557 . .	8	4. 8	7. 5	8. 8	21. 0	22. 3	23. 9	25. 4	26. 7	38. 6	40. 3	42. 5	17 23. 80	— 0. 01	8. 48	10 17 32. 27	10. 58
	Lacaille 4295 . .	9	. .	. .	. .	. .	. .	. .	58. 1	1. 0	2. 6	4. 1	5. 9	21 2. 34	42. 46	8. 47	10 20 28. 35	10. 58
	Lacaille 4307 . .	10	. .	. .	. .	53. 8	55. 1	56. 7	58. 2	59. 4	11. 3	12. 9	15. 3	23 2. 84	6. 28	8. 47	10 23 5. 03	10. 69
	Lacaille 4326 . .	11	55. 0	57. 5	58. 9	10. 5	11. 9	13. 3	14. 7	15. 9	27. 4	29. 0	31. 3	25 13. 22	0. 00	8. 47	10 25 21. 69	10. 83
	Lacaille 4345 . .	12	2. 9	5. 6	7. 0	19. 7	21. 0	22. 6	24. 3	25. 5	37. 7	39. 4	41. 9	27 22. 51	0. 01	8. 47	10 27 30. 97	10. 70
	Lacaille 4374 . .	13	4. 5	6. 9	8. 3	20. 1	21. 4	22. 9	24. 4	25. 5	37. 0	38. 7	41. 0	31 22. 79	0. 00	8. 47	10 31 31. 26	10. 93
	Lacaille 4389 . .	14	10. 9	13. 3	14. 7	26. 2	27. 5	28. 9	30. 3	31. 5	42. 7	44. 2	46. 5	33 28. 79	0. 00	8. 47	10 33 37. 26	11. 03
	B. A. C. 3677 . .	15	58. 9	1. 4	2. 8	14. 0	15. 3	16. 7	18. 2	19. 3	30. 6	32. 0	34. 3	36 16. 68	0. 00	8. 47	10 36 25. 15	10. 99
	Lacaille 4438 . .	16	. .	. .	. .	17. 6	19. 0	20. 7	22. 2	23. 3	35. 3	36. 9	39. 4	38 26. 80	6. 29	8. 46	10 38 28. 97	10. 99
	Lacaille 4463 . .	17	. .	. .	. .	41. 0	42. 3	43. 7	45. 1	46. 2	57. 1	58. 7	1. 1	41 49. 40	5. 81	8. 46	10 41 52. 05	11. 21
	Lacaille 4488 . .	18	. .	. .	. .	12. 3	13. 7	16. 2	34. 0	36. 7	38. 3	39. 5	41. 2	44 28. 99	30. 65	8. 46	10 44 6. 80	11. 20
	Lacaille 4498 . .	19	15. 4	18. 0	19. 3	31. 0	32. 3	33. 7	35. 1	36. 4	47. 9	49. 5	51. 9	46 33. 68	0. 00	8. 46	10 46 42. 14	11. 22
	Lacaille 4519 . .	20	59. 7	2. 3	3. 7	14. 8	16. 0	17. 4	18. 8	20. 0	30. 9	32. 5	34. 8	49 17. 35	0. 00	8. 46	10 49 25. 81	11. 34
	* — 34° 9′ . . .	21	. .	. .	. .	30. 2	31. 3	32. 8	34. 4	35. 6	. .	. .	. .	52 32. 86	— 0. 06	8. 46	10 52 41. 26	11. 34
	χ Leonis	22	35. 9	38. 0	39. 2	49. 0	50. 1	51. 3	52. 4	53. 5	3. 2	4. 3	6. 3	57 51. 20	+ 0. 06	8. 45	10 57 59. 71	12. 07
	Lacaille 4599 . .	23	. .	. .	. .	28. 1	29. 5	30. 8	32. 2	33. 3	. .	. .	. .	0 30. 78	— 0. 06	8. 45	11 0 39. 17	11. 51
	Lacaille 4633 . .	24	37. 4	39. 9	41. 1	52. 6	53. 8	55. 2	56. 6	57. 8	9. 0	10. 4	12. 7	3 55. 14	0. 00	8. 45	11 4 3. 59	11. 57
	Lacaille 4665 . .	25	. .	. .	. .	19. 7	21. 0	22. 4	23. 8	25. 0	. .	. .	. .	8 22. 38	0. 06	8. 45	11 8 30. 77	11. 64
	δ Crateris	26	. .	. .	. .	36. 1	37. 6	39. 5	54. 8	57. 2	58. 4	59. 6	1. 0	12 50. 52	— 26. 44	8. 45	11 12 32. 53	11. 86
	Lacaille 4735 . .	27	27. 6	30. 1	31. 5	43. 2	44. 4	45. 9	47. 3	48. 4	59. 7	1. 2	3. 8	17 45. 74	0. 00	8. 44	11 17 54. 18	11. 80
	τ Leonis	28	32. 8	34. 9	36. 0	45. 8	46. 7	47. 9	49. 2	50. 1	59. 6	0. 9	2. 9	20 47. 89	+ 0. 05	8. 44	11 20 56. 38	— 12. 11
	B. A. C. 8213, S. P.	29	. .	. .	. .	5. 0	46. 5	27. 5	6. 0	52. 0	. .	. .	. .	27 27. 40	— 1. 36	8. 44	23 27 34. 48	+ 14. 71
	Moon II . . .	†30	46. 0	48. 1	49. 3	59. 2	0. 4	1. 4	2. 7	3. 6	13. 4	14. 6	16. 6	40 1. 39	+ 0. 04	8. 30	22 40 9. 73	. .
14	Sun I	31	18. 5	20. 6	21. 8	31. 7	32. 7	33. 8	34. 9	36. 0	45. 7	46. 9	49 0	28 33. 78	0. 06	8. 36	1 28 42. 20	. .
Y.	Sun II	32	28. 1	30. 1	31. 5	41. 3	42. 4	43. 5	44. 6	45. 7	55. 4	56. 7	58. 8	30 43. 46	0. 06	8. 36	1 30 50. 88	. .
	α Tauri	33	40. 7	43. 0	44. 0	54. 0	55. 4	56. 5	57. 8	58. 7	8. 5	9. 8	11. 9	27 56. 39	0. 07	8. 29	4 28 4. 75	— 11. 36
	α Leonis	34	43. 4	45. 6	46. 7	56. 6	57. 7	58. 9	0. 2	1. 1	10. 7	12. 2	14. 1	0 58. 80	0. 07	8. 17	10 1 7. 04	12. 20
	γ¹ Leonis	35	40. 5	42. 0	43. 4	44. 7	47. 1	. .	51. 3	53. 8	54. 0	56. 4	57. 8	12 19. 10	0. 35	8. 17	10 12 27. 62	12. 66
	γ² Leonis	36	3. 6	5. 8	7. 1	17. 3	18. 5	19. 7	21. 0	22. 0	32. 1	34. 6	35. 6	12 19. 75	+ 0. 08	8. 17	10 12 28. 00	12. 60
18	B. Z. 499, 117 . .	37	22. 9	25. 5	26. 9	38. 8	40. 1	41. 6	43. 1	44. 3	56. 0	57. 5	59. 9	34 41. 51	— 0. 06	7. 12	10 34 48. 57	13. 18
Y.	* + 36° 22′.29 . .	38	35. 4	38. 0	39. 2	51. 2	52. 7	54. 2	55. 7	56. 9	8. 6	10. 2	12. 5	36 54. 05	— 0. 06	7. 12	10 37 1. 11	13. 17
	B. Z. 491 . . .	39	28. 5	30. 1	31. 8	33. 3	36. 3	. .	50. 9	53. 8	55. 3	56. 7	58. 4	38 13. 51	+ 0. 25	7. 12	10 38 20. 88	13. 16
	B. Z. 499, 130 . .	40	7. 3	9. 8	11. 3	23. 3	24. 5	26. 0	27. 5	28. 8	40. 5	42. 1	44. 3	38 25. 94	— 0. 06	7 12	10 38 33. 00	13. 16
	l Leonis	41	43. 4	45. 5	46. 7	56. 6	57. 6	58. 8	0. 0	1. 0	10. 6	12. 0	14. 0	41 58. 75	+ 0. 02	7. 12	10 42 5. 89	12. 17
	Σ Cat. Gen. 1248 . .	42	16. 2	18. 5	19. 7	30. 5	31. 6	33. 0	34. 2	35. 3	45. 7	47. 1	49. 4	43 32. 84	— 0. 02	7. 12	10 43 39. 94	12. 63
	Lalande 21016 . .	43	36. 2	38. 4	39. 6	50. 3	51. 4	52. 7	54. 0	55. 1	5. 4	6. 7	9. 0	48 52. 62	0. 02	7. 12	10 48 59. 72	12. 56
	B. Z. 353, 31 . .	44	. .	. .	59. 4	0. 8	2. 0	19. 4	22. 1	23. 4	24. 6	26. 2	. .	50 14. 74	28. 32	7. 12	10 49 53. 54	12. 59
	B. Z. 499, 144 .	45	39. 9	42. 4	43. 8	55. 7	57. 0	58. 5	0. 0	1. 1	12. 8	14. 3	16. 7	0 58. 38	0. 06	7. 12	11 1 5. 44	12. 90
	B. Z. 499, 147 . .	46	18. 6	21. 2	22. 6	34. 6	35. 9	37. 4	38. 8	40. 0	51. 7	53. 4	55. 8	2 37. 27	— 0. 06	7. 12	11 2 44. 33	12. 91
	B. A. C. 3837 . .	47	34. 9	37. 0	38. 2	47. 9	49. 0	50. 2	51. 4	52. 4	2. 0	3. 3	5. 4	6 50. 15	+ 0. 03	7. 13	11 6 57. 31	12. 13
	δ Crateris	48	9. 7	11. 8	13. 2	23. 0	24. 0	25. 3	26. 5	27. 5	37. 1	38. 6	40. 5	12 25. 20	0. 11	7. 13	11 12 32. 44	11. 82
	Weisse 261 . . .	49	51. 1	53. 3	54. 4	4. 2	5. 1	6. 3	7. 5	8. 5	18. 0	19. 2	21. 2	16 6. 25	0. 05	7. 13	11 16 13. 43	12. 07
	Weisse 284 . . .	50	23. 5	25. 6	26. 7	36. 4	37. 5	38. 6	39. 8	40. 8	50. 2	51. 5	53. 5	17 38. 55	0. 05	7. 13	11 17 45. 73	12. 05
	τ Leonis	51	33. 9	36. 1	37. 3	47. 0	48. 0	49. 1	50. 4	51. 3	0. 9	2. 1	4. 1	20 49. 11	0. 05	7. 13	11 20 56. 29	12. 09
	Weisse 349 . . .	52	13. 6	14. 9	16. 2	17. 3	19. 8	. .	20. 0	22. 3	23. 5	24. 6	26. 1	20 49. 83	0. 30	7. 13	11 20 57. 26	12. 09
	B. A. C. 3917 . .	53	1. 2	3. 3	4. 5	14. 0	15. 2	16. 3	17. 6	18. 5	28. 1	29. 3	31. 3	24 16. 30	0. 05	7. 13	11 24 23. 48	12. 08
	Weisse 429 . . .	54	15. 9	18. 0	19. 2	28. 8	29. 8	31. 0	32. 3	33. 1	42. 7	44. 0	46. 0	25 30. 98	+ 0. 05	+ 7. 13	11 25 38. 16	— 12. 07

30. Faint; reduced from clock error of 14th, allowing 0.12 s. for personal equation.

April 14, 8h. Image west 0.26 r. Clamp west.
Image west 0.35. Clamp east.
Reduced the level error.

April 14. n. = + 0.083 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 14, 8.2	+ 8.21	— 0.022	+ 0.046

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. April 18	* 115 W. . . .	1	27.4	29.3	30.4	40.2	41.3	42.4	43.5	44.5	54.0	55.3	57.3	29 42.33	+ 0.05	+ 7.13	11 29 49.51	− 12.07
	Weisse 553 . . .	2	55.7	57.7	59.1	8.7	9.8	11.0	12.2	13.1	22.6	23.8	25.8	32 10.86	0.05	7.13	11 32 18.04	12.08
	B. A. C. 3962 . .	3	3.3	5.3	6.5	16.2	17.2	18.4	19.6	20.6	30.1	31.3	33.4	33 18.35	0.05	7.13	11 33 25.53	12.09
Y.	Weisse 624 . . .	4	59.6	1.7	2.9	12.4	13.6	14.7	15.9	17.0	26.3	27.6	29.6	36 14.66	0.06	7.13	11 36 21.85	12.09
	Weisse 662 . . .	5	2.1	4.2	5.3	15.1	16.2	17.4	18.6	19.5	29.2	30.4	32.3	38 17.30	0.03	7.13	11 38 24.46	12.14
	β Leonis	6	44.3	46.5	47.7	57.7	58.8	59.9	1.1	2.2	12.0	13.4	15.3	41 59.90	0.01	7.13	11 42 7.04	12.09
	B. A. C. 4025 . .	7	30.6	32.6	33.9	43.4	44.5	45.7	46.9	47.8	57.3	58.6	0.5	47 45.62	0.06	7.14	11 47 52.82	12.12
	Lacaille 4993 . .	8	. .	. .	. .	32.9	34.4	35.7	37.4	38.8	. .	. .	. .	56 35.84	0.16	7.14	11 56 43.14	12.55
	Weisse 1011 . .	9	51.4	53.4	54.5	4.2	5.3	6.4	7.7	8.6	18.1	19.3	21.4	0 6.39	0.06	7.14	12 0 13.59	12.16
	Weisse 49 . . .	10	11.8	13.8	15.1	25.0	26.0	27.1	28.4	29.4	39.0	40.2	42.1	4 27.08	+ 0.03	7.14	12 4 34.25	12.14
	B. A. C. 4150 . .	11	56.0	35.0	1.0	18.0	39.5	3.0	29.0	48.0	1.0	28.5	9.0	13 2.56	− 2.62	7.14	12 13 7.08	24.73
	β Corvi	12	51.5	53.8	55.0	5.3	6.5	7.8	9.1	10.3	20.4	21.9	24.0	27 7.78	+ 0.14	7.15	12 27 15.07	12.63
	Weisse 497 . . .	13	8.1	10.3	11.5	21.4	22.5	23.6	24.9	25.9	35.6	36.9	38.9	30 23.60	0.02	7.15	12 30 30.77	12.07
	Weisse 652 . . .	14	43.4	45.4	46.6	56.6	57.7	58.9	0.1	1.2	10.9	12.2	14.3	38 58.85	0.01	7.15	12 39 6.01	12.03
	Rumker 4124 . .	15	52.3	54.4	55.6	5.5	6.7	7.9	9.0	10.1	19.9	21.3	23.2	40 7.81	0.01	7.15	12 40 14.97	12.03
	B. A. C. 4299 . .	16	2.8	5.0	6.2	16.3	17.4	18.5	19.8	20.8	30.5	31.8	33.8	41 18.45	0.01	7.15	12 41 25.61	12.03
	Weisse 803 . . .	17	24.0	26.0	27.0	37.0	38.1	39.3	40.5	41.3	51.2	52.5	54.3	47 39.20	0.09	7.15	12 47 46.44	12.49
	Weisse 835 . . .	18	5.7	7.8	9.0	18.5	19.8	20.8	22.0	23.0	32.5	33.8	35.8	49 20.79	0.06	7.15	12 49 28.00	12.28
	Weisse 878 . . .	19	38.5	40.6	41.8	51.4	52.5	53.7	54.8	55.9	5.4	6.6	8.6	51 53.62	0.06	7.15	12 52 0.83	12.31
	Weisse 918 . . .	20	54.6	56.7	57.9	7.6	8.7	10.1	11.2	12.2	21.9	23.2	25.0	54 9.92	0.10	7.15	12 54 17.17	12.54
	Polaris, S. P. . .	21	23.0	1.0	15.0	41.0	59.0	15.0	28.0	45.0	22.0	29.0	11.0	8 15.36	5.17	7.16	1 8 27.69	25.26
	Jupiter I . . .	22	5.8	7.9	9.0	18.8	19.8	21.0	22.2	23.3	32.6	34.0	35.7	22 20.92	0.08	7.16	13 22 28.16	. .
	Jupiter II . . .	23	47.4	48.6	49.9	51.1	53.5	. .	54.0	56.1	57.5	58.7	0.1	22 23.69	+ 0.33	7.16	13 22 31.18	. .
	* + 77° 0′ . . .	24	58.0	7.6	12.8	55.1	59.9	4.9	10.6	15.0	56.7	2.4	11.1	32 4.92	− 0.58	7.17	13 32 11.51	7.76
	i Centauri . . .	25	33.1	35.6	37.0	48.5	49.6	50.9	52.4	53.6	4.9	6.5	8.6	37 50.97	+ 0.20	7.17	13 37 58.34	13.94
	g Centauri . . .	26	9.2	11.8	13.2	24.9	26.1	27.5	29.1	30.2	41.5	43.0	45.3	41 27.44	0.20	7.17	13 41 34.81	14.09
	k Centauri, (1st *) .	27	8.8	10.3	11.7	13.3	16.2	. .	27.3	30.1	31.5	33.0	34.4	43 51.66	0.50	7.17	13 43 59.33	14.01
	k Centauri, (2d *) .	28	34.7	37.3	38.7	50.1	51.2	52.7	54.0	55.2	6.5	8.0	10.4	43 52.62	+ 0.20	7.17	13 43 59.99	14.01
	Lacaille 5743 . .	29	. .	. .	. .	51.2	52.7	55.2	13.2	15.8	17.3	18.6	20.5	47 8.06	− 30.74	7.17	13 46 44.49	14.17
	Lacaille 5779 . .	30	18.1	21.2	22.9	35.8	37.5	39.1	40.7	42.2	55.1	56.8	59.7	52 39.01	+ 0.27	7.17	13 52 46.45	15.14
	Lacaille 5819 . .	31	3.2	5.7	7.1	18.8	20.0	21.4	22.8	24.0	35.5	37.0	38.4	58 21.26	0.21	7.17	13 58 28.64	14.34
	Lacaille 5839 . .	32	30.2	32.5	33.9	45.1	46.5	47.8	49.4	50.4	1.4	3.4	5.2	2 47.80	0.18	7.17	14 2 55.15	14.16
	Lacaille 5843 . .	33	. .	. .	. .	22.0	23.0	24.5	25.7	26.9	. .	. .	. .	3 24.42	0.12	7.17	14 3 31.71	14.18
	α Bootis	34	4.7	6.7	8.1	18.4	19.4	20.7	21.8	22.9	33.1	34.4	36.5	9 20.61	0.00	7.17	14 9 27.78	11.17
	Weisse 221 . . .	35	44.0	46.1	47.4	56.9	58.0	59.2	0.3	1.3	10.9	12.1	14.0	12 59.11	0.07	7.18	14 13 6.36	12.52
	Weisse 252 . . .	36	40.0	42.2	43.4	53.2	54.1	55.4	56.6	57.6	7.0	8.3	10.3	14 55.28	0.09	7.18	14 15 2.55	12.82
	Weisse 314 . . .	37	25.1	27.3	28.3	38.2	39.1	40.2	41.3	42.5	52.0	53.1	55.2	17 40.21	0.05	7.18	14 17 47.44	12.18
	* 112 W. . . .	38	31.0	33.1	34.1	44.0	45.0	46.2	47.4	48.3	57.9	58.9	0.7	18 46.05	0.05	7.18	14 18 53.28	12.18
	O. Arg. S. 13694 .	39	36.1	38.3	39.5	50.2	51.4	52.7	54.2	55.3	5.3	6.7	8.8	23 52.59	0.15	7.18	14 23 59.92	13.78
	Rumker 4739 . .	40	36.7	38.8	39.8	49.5	50.8	51.8	53.0	54.0	3.4	4.6	6.8	26 51.75	+ 0.06	7.18	14 26 58.99	12.25
	B. Z. 292, 1 . . .	41	13.6	15.8	17.1	27.5	28.6	29.9	31.3	32.4	42.5	44.0	46.0	33 29.88	− 0.01	7.18	14 33 37.05	11.10
	ε Bootis	42	39.0	41.3	42.6	53.5	54.8	56.0	57.5	58.7	9.2	10.6	12.9	38 56.01	− 0.03	7.18	14 39 3.16	10.80
	δ Libræ	43	25.1	26.5	27.8	29.0	31.4	. .	33.6	36.1	37.5	38.6	40.1	43 2.57	+ 0.37	7.18	14 43 10.12	13.28
	α Libræ	44	58.7	0.8	2.0	11.9	13.0	14.3	15.5	16.7	26.6	27.7	29.8	43 14.27	+ 0.11	7.18	14 43 21.56	13.27
21	Lalande 21025 . .	45	3.5	5.9	7.3	19.5	20.9	22.4	23.6	24.8	36.5	38.2	40.6	49 22.11	− 0.05	6.86	10 49 28.92	12.99
	B. Z. 499, 133 . .	46	1.0	3.5	5.1	17.0	18.4	19.8	21.4	22.6	34.2	35.7	38.1	51 19.71	0.05	6.86	10 51 26.52	12.97
	B. Z. 499, 138 . .	47	6.9	9.3	10.7	22.4	23.8	25.2	26.5	27.7	39.4	40.8	43.3	56 25.09	− 0.04	6.86	10 56 31.91	12.88
	χ Leonis	48	37.7	39.6	40.9	50.7	51.8	53.0	54.1	55.1	4.7	6.0	8.1	57 52.88	+ 0.05	6.85	10 57 59.78	12.00
	B. Z. 499, 144 . .	49	. .	. .	. .	56.2	57.4	58.9	0.4	1.4	. .	. .	. .	0 58.86	− 0.11	6.85	11 1 5.60	12.86
	B. Z. 499, 147 . .	50	19.1	21.7	23.0	35.2	36.4	37.7	39.3	40.5	52.1	53.9	56.2	2 37.74	− 0.05	6.85	11 2 44.54	12.87
	B. A. C. 3837 . .	51	35.5	37.6	38.7	48.5	49.6	50.8	52.0	53.0	2.6	3.8	5.8	6 50.72	+ 0.05	6.85	11 6 57.62	12.11
	B. Z. 358, 8 . .	52	10.5	13.2	14.7	26.6	27.8	29.3	30.9	32.0	43.8	45.4	48.0	10 29.29	− 0.05	6.85	11 10 36.09	12.78
	B. Z. 358, 9 . .	53	59.1	1.5	3.0	15.0	16.2	17.7	19.3	20.5	32.2	33.8	36.2	11 17.68	− 0.05	6.85	11 11 24.48	12.79
	Weisse 234 . . .	54	15.8	17.9	19.1	28.8	30.0	31.0	32.2	33.2	42.7	44.0	45.9	14 30.96	+ 0.05	6.84	11 14 37.85	12.10
	Weisse 258 . . .	55	41.0	43.1	44.0	53.9	55.0	. .	57.4	58.4	7.8	9.0	11.0	15 56.06	+ 0.07	+ 6.84	11 16 2.97	− 12.06

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 18, 12.6	+ 7.15	− 0.016	+ 0.060

April 18. n. = − 0.188 s.

TE.		OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
33.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
il 21		B. Z. 496, 49 . .	1	55. 9	58. 1	59. 4	9. 8	10. 9	12. 0	13. 5	14. 5	24. 5	26. 0	28. 2	19 12. 08	+ 0. 01	+ 6. 84	11 19 18. 93	− 12. 33
.	τ	Leonis	2	34. 4	36. 6	37. 6	47. 5	48. 6	49. 6	50. 8	51. 8	1. 3	2. 5	4. 4	20 49. 55	0. 06	6. 84	11 20 56. 45	12. 06
		Weisse 349 . . .	3	14. 0	15. 3	16. 6	17. 7	20. 2	. .	20. 4	22. 7	24. 0	25. 1	26. 5	20 50. 25	0. 31	6. 84	11 20 57. 40	12. 05
		Weisse 429 . . .	4	16. 3	18. 3	19. 6	29. 4	30. 4	31. 5	32. 8	33. 8	43. 2	44. 4	46. 5	25 31. 47	0. 07	6. 84	11 25 38. 38	12. 05
		Weisse 438 . . .	5	. .	. .	. .	54. 3	55. 5	56. 7	57. 9	58. 9	. .	. .	. .	25 56. 66	+ 0. 02	6. 84	11 26 3. 52	12. 05
		B. A. C. 3937 . .	6	. .	. .	. .	14. 5	15. 9	18. 1	35. 2	37. 7	39. 2	40. 4	42. 2	29 30. 40	− 29. 25	6. 84	11 29 7. 99	12. 42
		B. Z. 526, 102 .	7	. .	. .	. .	55. 3	56. 6	57. 8	59. 0	0. 2	. .	. .	. .	29 57. 78	− 0. 07	6. 84	11 30 4. 55	12. 41
		Weisse 624 . . .	8	59. 9	2. 0	3. 2	12. 9	14. 0	15. 2	16. 4	17. 3	26. 7	28. 0	29. 9	36 15. 04	+ 0. 07	6. 83	11 36 21. 94	12. 07
		Weisse 652 . . .	9	. .	. .	. .	46. 2	47. 3	48. 5	49. 7	50. 7	. .	. .	. .	37 48. 48	0. 00	6. 83	11 37 55. 31	12. 11
		Weisse 662 . . .	10	2. 5	4. 5	5. 7	15. 6	16. 5	17. 8	19. 0	20. 0	29. 4	30. 7	32. 7	38 17. 67	+ 0. 05	6. 83	11 38 24. 55	12. 12
		Carrington 1762 .	11	. .	. .	. .	22. 0	42. 0	4. 5	26. 0	45. 0	. .	. .	. .	45 3. 90	− 3. 09	6. 83	11 45 7. 64	32. 83
	o	Virginis	12	54. 6	56. 7	57. 8	7. 5	8. 6	9. 8	11. 0	12. 0	21. 7	23. 1	24. 9	58 9. 79	+ 0. 04	6. 82	11 58 16. 65	12. 09
		Weisse 1011 . .	13	51. 8	53. 8	55. 0	4. 5	5. 6	6. 8	8. 0	9. 0	18. 5	19. 5	21. 6	0 6. 74	0. 07	6. 82	12 0 13. 63	12. 15
		Saturn I . . .	14	49. 1	51. 0	52. 3	2. 0	3. 2	4. 1	5. 4	6. 5	16. 0	17. 0	19. 0	4 4. 15	0. 07	6. 82	12 4 11. 04	. .
		Saturn II . . .	15	29. 0	30. 2	31. 4	32. 8	35. 3	. .	35. 3	37. 8	38. 7	40. 2	41. 4	4 5. 21	0. 32	6. 82	12 4 12. 35	. .
		Lacaille 5066 . .	16	. .	. .	. .	24. 1	25. 5	26. 8	28. 3	29. 5	. .	. .	. .	6 26. 84	0. 15	6. 82	12 6 33. 81	12. 59
		Lacaille 5088 . .	17	16. 4	19. 0	20. 4	32. 3	33. 6	35. 0	36. 5	37. 8	49. 3	51. 0	53. 3	10 34. 96	0. 23	6. 81	12 10 42. 00	12. 73
		Lacaille 5102 . .	18	33. 0	35. 5	37. 2	49. 2	50. 6	52. 0	53. 4	54. 8	6. 5	8. 1	10. 6	12 51. 90	0. 24	6. 81	12 12 58. 95	12. 75
		Lacaille 5126 . .	19	39. 7	42. 5	43. 9	55. 7	57. 2	58. 6	0. 1	1. 5	13. 2	14. 8	17. 3	15 58. 59	0. 24	6. 81	12 16 5. 64	12. 87
	κ²	Centauri . . .	20	47. 2	49. 9	51. 3	2. 9	4. 2	5. 7	7. 1	8. 3	19. 9	21. 3	23. 7	18 5. 59	0. 22	6. 81	12 18 12. 62	12. 84
		B. A. C. 4202 . .	21	43. 2	46. 0	47. 5	59. 6	1. 2	2. 6	4. 1	5. 4	17. 4	19. 0	21. 5	21 2. 50	0. 24	6. 81	12 21 9. 55	13. 02
		Lacaille 5189 . .	22	15. 4	18. 2	19. 7	32. 3	33. 7	35. 2	36. 8	38. 2	50. 6	52. 1	54. 9	24 35. 19	0. 26	6. 81	12 24 42. 26	13. 18
		B. A. C. 4243 . .	23	0. 7	3. 5	5. 0	17. 7	19. 0	20. 5	22. 2	23. 3	35. 8	37. 5	40. 1	28 20. 48	0. 26	6. 80	12 28 27. 54	13. 26
		Lacaille 5226 . .	24	40. 4	42. 8	44. 5	56. 6	57. 9	59. 5	0. 9	2. 2	14. 3	15. 9	18. 4	30 59. 40	0. 24	6. 80	12 31 6. 44	13. 21
		Lacaille 5238 . .	25	. .	. .	. .	34. 8	36. 4	38. 0	39. 6	41. 2	. .	. .	. .	33 38. 00	0. 22	6. 80	12 33 45. 02	13. 53
		Lacaille 5261 . .	26	14. 4	16. 9	18. 3	30. 0	31. 2	32. 6	34. 0	35. 3	46. 7	48. 3	50. 7	36 32. 58	0. 22	6. 80	12 36 39. 60	13. 15
		Lacaille 5281 . .	27	17. 0	20. 0	21. 6	35. 0	36. 7	38. 3	39. 9	41. 2	54. 3	56. 1	58. 7	40 38. 07	0. 29	6. 80	12 40 45. 16	13. 73
		B. A. C. 4313 . .	28	2. 3	5. 0	6. 5	19. 0	20. 2	21. 7	23. 3	24. 4	36. 7	38. 3	40. 8	44 21. 65	0. 25	6. 80	12 44 28. 70	13. 51
		B. A. C. 4331 . .	29	57. 7	0. 5	2. 0	15. 4	16. 7	18. 5	20. 1	21. 4	34. 3	36. 0	38. 8	47 18. 31	0. 28	6. 79	12 47 25. 38	13. 84
		Lacaille 5347 . .	30	2. 4	5. 4	7. 0	20. 1	21. 5	23. 0	24. 7	26. 2	38. 9	40. 9	43. 5	51 23. 05	0. 28	6. 79	12 51 30. 12	13. 90
		B. A. C. 4378 . .	31	27. 1	29. 8	31. 3	44. 1	45. 3	47. 0	48. 6	50. 0	2. 5	4. 0	6. 6	58 46. 94	0. 26	6. 79	12 58 53. 99	13. 91
	θ	Virginis, (Comp.) .	32	11. 3	12. 5	13. 9	15. 1	17. 4	. .	17. 7	20. 0	21. 0	22. 2	23. 7	2 47. 48	0. 34	6. 79	13 2 54. 61	12. 43
	θ	Virginis	33	32. 7	34. 7	36. 0	45. 7	46. 7	47. 9	49. 1	50. 2	59. 5	0. 8	2. 7	2 47. 82	0. 09	6. 79	13 2 54. 70	12. 43
	α¹	Ursæ Minoris, S. P.	34	. .	. .	. .	19. 0	. .	50. 0	. .	21. 0	. .	. .	. .	7 50. 00	6. 16	6. 78	1 8 2. 94	25. 90
		Polaris, S. P. . .	35	. .	. .	. .	48. 0	2. 0	15. 0	26. 0	46. 0	. .	. .	. .	8 15. 40	6. 50	6. 78	1 8 28. 68	26. 33
		Weisse 225 . . .	36	6. 4	8. 3	9. 5	19. 2	20. 2	21. 5	22. 7	23. 7	33. 0	34. 3	36. 3	14 21. 37	0. 08	6. 78	13 14 28. 23	12. 42
		Weisse 268 . . .	37	1. 6	3. 6	4. 7	14. 4	15. 5	16. 7	17. 9	18. 8	28. 3	29. 5	31. 4	17 16. 58	0. 07	6. 78	13 17 23. 43	12. 31
		Weisse 312 . . .	38	42. 6	44. 8	45. 9	55. 6	56. 6	57. 7	58. 9	59. 9	9. 4	10. 5	12. 6	19 57. 68	0. 07	6. 78	13 20 4. 53	12. 26
		Weisse 365 . . .	39	48. 9	51. 0	52. 2	1. 9	2. 8	4. 2	5. 3	6. 4	16. 0	17. 1	19. 1	23 4. 08	0. 05	6. 77	13 23 10. 90	12. 08
	ζ	Virginis	40	23. 9	26. 1	27. 3	36. 9	37. 9	39. 1	40. 2	41. 3	50. 7	51. 9	53. 9	27 39. 02	0. 07	6. 77	13 27 45. 86	12. 28
		Lacaille 5621 . .	41	40. 9	43. 3	44. 7	56. 2	57. 3	58. 7	0. 2	1. 3	12. 5	14. 1	16. 4	30 58. 69	0. 21	6. 77	13 31 5. 67	13. 87
		Lacaille 5645 . .	42	33. 8	36. 3	37. 8	49. 3	50. 4	51. 9	53. 4	54. 5	5. 7	7. 2	9. 5	33 51. 80	0. 21	6. 77	13 33 58. 78	13. 95
		Lacaille 5665 . .	43	10. 6	13. 3	14. 5	26. 5	27. 9	29. 2	30. 6	31. 9	43. 4	45. 0	47. 3	37 29. 11	0. 23	6. 77	13 37 36. 11	14. 17
		Lacaille 5680 . .	44	18. 2	20. 9	22. 3	34. 1	35. 5	37. 0	38. 5	39. 7	51. 4	53. 0	55. 5	40 36. 92	0. 23	6. 76	13 40 43. 91	14. 31
		B. A. C. 4620 . .	45	14. 6	17. 1	18. 6	30. 4	31. 8	33. 3	34. 7	35. 9	47. 6	49. 2	51. 6	43 33. 16	0. 23	6. 76	13 43 40. 15	14. 30
		B. A. C. 4631 . .	46	. .	. .	. .	27. 2	28. 3	29. 8	31. 3	32. 5	. .	. .	. .	45 39. 84	0. 16	6. 76	13 45 46. 76	14. 26
		Lacaille 5758 . .	47	45. 2	46. 9	48. 5	50. 1	53. 1	. .	9. 0	11. 9	13. 5	15. 0	16. 5	48 30. 97	0. 56	6. 76	13 48 38. 29	14. 52
		* —37° 35′ . . .	48	19. 3	22. 0	23. 5	35. 8	37. 1	38. 5	40. 3	41. 3	53. 3	55. 0	57. 2	48 38. 48	+ 0. 24	6. 76	13 48 45. 48	14. 52
		B. A. C. 4667 . .	49	. .	. .	. .	15. 5	17. 4	19. 8	39. 3	42. 2	43. 8	45. 2	47. 1	53 33. 79	− 33. 05	6. 76	13 53 7. 50	14. 77
		Lacaille 5819 . .	50	3. 6	6. 1	7. 4	19. 3	20. 7	22. 0	23. 3	24. 6	36. 0	37. 6	39. 9	58 21. 86	+ 0. 22	6. 76	13 58 28. 84	14. 37
		Lacaille 5824 . .	51	20. 2	22. 6	24. 1	35. 9	37. 1	38. 5	40. 0	41. 2	52. 6	54. 2	56. 5	59 38. 45	0. 22	6. 75	13 59 45. 42	14. 39
		Lacaille 5839 . .	52	30. 7	33. 0	34. 5	45. 8	47. 0	48. 3	49. 7	50. 8	2. 1	3. 5	5. 7	2 48. 28	0. 20	6. 75	14 2 55. 23	14. 19
		Lacaille 5843 . .	53	. .	. .	. .	22. 5	23. 5	24. 9	26. 4	27. 6	. .	. .	. .	3 24. 98	0. 14	6. 75	14 3 31. 87	14. 21
	κ	Virginis	54	16. 7	18. 8	20. 0	29. 6	30. 7	31. 9	33. 1	34. 2	43. 7	45. 0	46. 9	5 31. 87	0. 11	6. 75	14 5 38. 73	12. 84
		Lacaille 5873 . .	55	. .	. .	. .	10. 7	11. 8	13. 2	14. 5	15. 5	. .	. .	. .	8 13. 14	+ 0. 14	+ 6. 75	14 8 20. 03	− 14. 25

April 21. n. = − 0.188. (s.)

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 21, 13.5	+ 6.77	− 0.033	+ 0.074

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Apr. 21	Lacaille 5886 . .	1	45.6	48.3	49.6	1.7	2.9	4.5	6.0	7.3	19.0	20.6	23.0	11 4.41	+ 0.23	+ 6.75	14 11 11.39	— 14.72
	B. A. C. 4757 . .	2	46.4	48.8	50.2	1.9	3.2	4.6	6.2	7.3	18.5	20.2	22.6	14 4.54	0.22	6.75	14 14 11.51	14.55
	Lacaille 5932 . .	3	1.2	3.6	4.9	16.5	17.6	19.0	20.4	21.6	32.9	34.4	36.6	17 18.97	0.21	6.74	14 17 25.92	14.43
Y.	Lacaille 5955 . .	4	31.0	33.6	35.2	47.9	49.0	50.6	52.3	53.4	5.7	7.6	10.1	21 50.58	0.25	6.74	14 21 57.57	15.23
	Lacaille 5999 . .	5	28.9	31.6	33.1	45.6	46.9	48.5	50.0	51.2	3.3	5.1	7.6	27 48.35	0.25	6.74	14 27 55.34	15.21
	Lacaille 6027 . .	6	39.7	42.1	43.6	55.1	56.4	57.8	59.0	0.4	11.3	13.0	15.4	30 57.62	0.21	6.74	14 31 4.57	14.61
	* — 32° 10′ . . .	7	58.4	59.9	1.3	3.0	5.7	. .	. .	19.4	21.0	22.3	23.9	33 10.55	4.46	6.74	14 33 21.75	14.58
	Lacaille 6054 .	8	38.5	40.8	42.4	53.6	54.8	56.4	57.8	58.8	10.1	11.7	13.9	33 56.25	0.21	6.74	14 34 3.20	14.58
	ε Bootis, (Comp.) .	9	15.0	16.6	18.2	19.5	22.1	. .	30.1	32.6	33.9	35.2	36.9	38 56.01	+ 0.26	6.73	14 39 3.00	10.84
	ε Bootis	10	39.5	41.8	43.2	50.0	55.1	56.4	57.9	59.2	9.6	11.0	13.3	38 56.45	— 0.02	6.73	14 39 3.16	10.83
	α Libræ	11	59.2	1.4	2.5	12.7	13.8	15.1	16.2	17.2	26.9	28.4	30.3	43 14.88	+ 0.13	6.73	14 43 21.74	13.31
	B. A. C. 4912 . .	12	. .	. .	. .	10.6	11.9	13.4	14.7	15.9	. .	. .	. .	46 13.30	0.15	6.73	14 46 20.18	14.75
	Lacaille 6157 . .	13	. .	. .	. .	53.3	54.6	56.1	57.4	58.5	. .	. .	. .	48 55.98	0.15	6.73	14 49 2.86	14.73
	Lacaille 6164 . .	14	. .	. .	. .	13.9	15.2	16.6	18.0	19.3	. .	. .	. .	49 16.60	0.15	6.73	14 49 23.48	14.73
	Lacaille 6190 . .	15	9.4	11.9	13.2	25.0	26.1	27.4	29.0	30.1	41.6	43.2	45.6	53 27.50	0.22	6.72	14 53 34.44	14.92
	Lacaille 6219 . .	16	56.2	58.5	59.7	11.0	12.2	13.6	15.0	16.0	27.0	28.5	30.7	57 13.49	0.19	6.72	14 57 20.40	14.57
	Lacaille 6237 . .	17	38.2	40.7	42.4	54.4	55.6	57.2	58.8	59.9	11.7	13.4	16.0	59 57.12	0.24	6.72	15 0 4.08	15.34
	β Libræ	†18	. .	. .	. .	32.6	33.6	34.8	36.0	37.0	. .	. .	. .	9 34.80	+ 0.05	6.72	15 9 41.57	— 12.91
22	Venus I	19	. .	. .	. .	43.8	45.3	47.3	3.5	5.9	7.2	8.5	10.0	5 58.94	— 27.72	6.37	4 5 37.59	+ 0.45
N.	α Tauri	20	42.8	44.8	45.9	56.1	57.2	58.6	59.8	0.9	10.6	11.8	13.9	27 58.40	+ 0.05	6.36	4 28 4.81	— 11.29
	α Orionis	21	24.9	27.0	28.0	38.0	39.0	40.3	41.4	42.3	51.9	53.3	55.0	47 40.10	0.06	6.32	5 47 46.48	10.94
24 Y.	α Andromedæ	22	56.4	58.7	0.0	10.9	12.3	13.6	14.9	16.0	26.7	28.3	30.5	1 13.48	0.05	5.99	0 1 19.52	— 10.10
25	Sun I	23	18.4	20.5	21.5	31.7	32.7	. .	35.0	36.1	45.9	47.2	49.2	9 33.82	0.08	5.94	2 9 39.84	. .
	Sun II . . .	24	29.4	31.5	32.7	42.6	43.7	44.9	46.2	47.3	56.9	58.2	0.3	11 44.88	0.07	5.94	2 11 50.89	. .
	Venus I	25	28.1	30.3	31.7	42.0	43.1	44.4	45.7	46.9	57.2	58.6	0.7	20 44.43	0.06	5.89	4 20 50.38	+ 0.47
	α Tauri	26	43.2	45.2	46.5	56.5	57.5	58.8	0.0	1.1	11.0	12.3	14.3	27 58.76	0.07	5.88	4 28 4.71	— 11.28
	α Aurigæ	27	7.9	11.0	12.7	26.5	27.9	29.7	31.4	32.9	46.4	48.4	51.3	6 29.65	0.04	5.88	5 6 35.57	14.59
	β Orionis	28	. .	. .	. .	49.9	51.0	52.2	53.3	54.4	. .	. .	. .	7 52.16	0.05	5.87	5 7 58.08	9.40
	δ Orionis	29	40.5	42.3	43.7	53.4	54.4	55.5	56.7	57.8	7.2	8.4	10.5	24 55.48	0.09	5.87	5 25 1.44	10.14
	Moon I . . .	†30	29.0	31.0	32.4	42.6	43.7	45.0	46.1	47.2	57.1	58.5	0.5	15 44.83	0.05	5.98	8 15 50.86	. .
	δ Cancri	31	33.9	36.1	37.3	47.4	48.5	49.7	51.1	52.0	2.1	3.5	5.5	36 49.74	+ 0.05	5.99	8 36 55.78	12.37
	ε Hydræ	†32	11.9	14.0	15.1	. .	25.9	27.1	28.3	29.3	38.8	40.1	42.0	39 27.25	— 0.15	6.00	8 39 33.10	11.56
	60 Cancri	33	7.2	9.3	10.4	20.4	21.5	22.6	23.9	24.8	34.6	35.8	37.9	48 22.58	+ 0.06	6.00	8 48 28.64	11.95
	α Cancri	34	40.1	42.2	43.5	53.3	54.4	55.6	56.8	57.8	7.5	8.8	10.9	50 55.54	0.06	6.00	8 51 1.60	11.98
	κ Cancri	35	0.2	2.3	3.5	13.3	14.4	15.6	16.8	17.8	27.5	28.8	30.7	0 15.54	0.06	6.01	9 0 21.61	11.92
	Lacaille 3945 . .	36	. .	. .	. .	42.7	43.8	45.2	46.6	47.8	. .	. .	. .	31 45.22	0.13	6.02	9 31 51.37	9.91
	Lacaille 3967 . .	37	57.7	0.3	1.5	12.7	14.0	15.3	16.7	17.9	28.9	30.3	32.5	34 15.25	0.18	6.02	9 34 21.45	9.94
	Lacaille 3984 . .	38	37.2	39.8	41.2	52.6	54.0	55.3	56.8	57.9	9.1	10.7	13.1	36 55.25	0.19	6.02	9 37 1.46	9.84
	Weisse 929 . .	39	4.7	6.9	8.0	18.0	19.1	20.3	21.5	22.5	32.3	33.7	35.7	43 20.25	0.06	6.03	9 43 26.34	12.20
	* + 15° 25′ . . .	40	. .	. .	. .	57.5	58.6	59.8	1.0	2.1	. .	. .	. .	45 59.80	0.00	6.03	9 46 5.83	12.22
	Rumker 2988 . .	41	39.5	40.8	42.2	43.4	45.9	. .	48.3	50.6	51.9	53.0	54.4	46 17.00	0.31	6.03	9 46 23.34	12.23
	B. A. C. 3405 . .	42	14.8	17.3	18.6	30.2	31.4	32.9	34.1	35.4	46.6	48.2	50.5	50 32.73	0.19	6.03	9 50 38.95	10.08
	Lacaille 4111 . .	43	39.9	42.3	43.7	55.5	56.5	58.1	59.4	0.6	12.0	13.5	15.9	55 57.94	0.19	6.03	9 56 4.16	10.16
	Lacaille 4142 . .	44	9.4	12.0	13.4	24.9	26.2	27.5	29.1	30.2	41.4	42.9	45.3	59 27.48	0.19	6.04	9 59 33.71	10.25
	B. A. C. 3466 . .	45	19.4	22.0	23.6	36.3	37.7	39.3	41.0	42.3	54.7	56.5	59.0	2 39.25	0.00	6.04	10 2 45.29	13.70
	B. Z. 454, 41 . .	46	59.8	2.6	4.2	17.1	18.4	20.2	21.8	23.1	35.8	37.4	40.2	8 20.05	0.01	6.04	10 8 26.10	13.70
	Radcliffe 2466 . .	47	32.1	33.8	35.5	37.2	40.4	. .	1.2	4.2	5.9	7.4	9.3	8 20.70	0.35	6.04	10 8 27.09	13.70
	* — 3° 37′ . . .	48	53.2	55.0	56.3	5.9	7.1	8.2	9.4	10.4	19.8	21.1	23.1	13 8.14	0.09	6.04	10 13 14.27	11.54
	B. A. C. 3557 . .	49	6.8	9.4	10.9	23.0	24.3	25.9	27.5	28.6	40.5	42.2	44.6	17 25.79	0.21	6.05	10 17 32.05	10.39
	Lacaille 4295 . .	50	2.5	5.3	6.7	19.1	20.4	22.0	23.6	24.8	36.9	38.5	41.0	20 21.89	0.22	6.05	10 20 28.16	10.39
	Lacaille 4307 . .	51	39.7	42.2	43.5	56.0	57.3	58.6	0.2	1.4	13.3	15.1	17.4	22 58.61	0.21	6.05	10 23 4.87	10.50
	Lacaille 4345 . .	52	4.8	7.6	9.1	21.6	23.0	24.5	26.0	27.4	39.4	41.3	43.8	27 24.41	0.23	6.05	10 27 30.69	10.51
	Lacaille 4374 . .	53	6.4	9.1	10.4	22.1	23.6	25.0	26.3	27.7	39.3	40.6	43.1	31 24.87	+ 0.20	+ 6.05	10 31 31.12	— 10.76

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 22, 5.2	+ 6.34	— 0.030	+ 0.074
24, 2.2	5.94	.024	+ 0.087
25, 8.2	+ 5.98	— .032	. .

18. Very unsteady.
30. Very steady.
32. Companion distinctly visible.

April 22, n. = — 0.081.
24–25, 0h. to 6h. 0.081.
25, 8h. to 11h. 0.135.
11h. to 14h. 0.188.

r.
12h. 30m. Image east 0.05. Clamp west.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	+ m. s.	s.	h. m. s.	— s.
l 25	Lacaille 4389	1	12. 8	15. 4	16. 7	28. 2	29. 4	30. 8	32. 3	33. 4	44. 8	46. 3	48. 6	33 30. 79	0. 19	6. 05	10 33 37. 03	10. 86
	B. A. C. 3677	2	1. 2	3. 5	4. 9	16. 2	17. 4	18. 8	20. 2	21. 4	32. 7	34. 0	36. 5	36 18. 80	0. 19	6. 06	10 36 25. 05	10. 94
	Lacaille 4438	3	. .	. .	. .	19. 8	21. 1	22. 5	24. 2	25. 4	. .	. .	. .	38 22. 60	0. 15	6. 06	10 38 28. 81	10. 83
	O. Arg. S. 10887	4	47. 5	49. 9	51. 3	2. 6	3. 7	5. 2	6. 5	7. 5	18. 7	20. 3	22. 5	41 5. 06	0. 18	6. 06	10 41 11. 30	11. 06
	Lacaille 4463	5	27. 9	30. 5	31. 8	43. 1	44. 3	45. 4	47. 1	48. 2	59. 3	0. 8	3. 1	41 45. 60	0. 18	6. 06	10 41 51. 84	11. 07
	Lacaille 4488	6	42. 4	44. 9	46. 2	57. 8	59. 1	0. 5	1. 9	3. 0	14. 3	15. 9	18. 2	44 0. 38	0. 19	6. 06	10 44 6. 63	11. 06
	Lacaille 4498	7	17. 4	19. 9	21. 4	33. 0	34. 3	35. 8	37. 4	38. 5	50. 0	51. 5	54. 0	46 35. 75	0. 20	6. 06	10 46 42. 01	11. 07
	Lacaille 4519	8	1. 8	4. 3	5. 5	16. 9	18. 1	19. 6	20. 9	22. 0	33. 0	34. 5	36. 9	49 19. 41	0. 18	6. 06	10 49 25. 65	11. 20
	B. A. C. 3774	9	49. 7	52. 2	53. 4	5. 0	6. 0	7. 4	8. 8	10. 0	21. 0	22. 5	24. 9	54 7. 36	0. 18	6. 07	10 54 13. 61	11. 28
	χ Leonis	10	38. 4	40. 3	41. 5	51. 3	52. 4	53. 5	54. 7	55. 7	5. 3	6. 6	8. 5	57 53. 47	0. 07	6. 07	10 57 59. 61	11. 96
	Lacaille 4599	11	15. 0	17. 4	18. 9	30. 1	31. 5	32. 8	34. 2	35. 4	46. 5	48. 2	50. 4	0 32. 76	0. 21	6. 07	11 0 39. 04	11. 39
	Lacaille 4633	12	39. 4	41. 8	43. 2	54. 5	55. 8	57. 1	58. 5	59. 7	10. 9	12. 4	14. 7	3 57. 09	0. 21	6. 07	11 4 3. 37	11. 45
	Lacaille 4642	13	18. 0	20. 4	21. 8	33. 1	34. 4	35. 7	37. 2	38. 2	49. 4	50. 8	53. 1	5 35. 65	0. 21	6. 07	11 5 41. 93	11. 48
	Lacaille 4665	14	6. 6	8. 9	10. 3	21. 7	23. 0	24. 5	25. 7	27. 0	38. 4	39. 7	42. 2	8 24. 36	0. 22	6. 07	11 8 30. 65	11. 62
	Lacaille 4687	15	39. 9	42. 2	43. 7	55. 1	56. 4	57. 9	59. 2	0. 4	11. 6	13. 2	15. 4	10 57. 73	0. 22	6. 08	11 11 4. 03	11. 56
	Lacaille 4709	16	30. 5	33. 0	34. 3	45. 6	46. 8	48. 2	49. 5	50. 7	1. 8	3. 4	5. 7	13 48. 14	0. 21	6. 08	11 13 54. 43	11. 63
	Lacaille 4735	17	29. 8	32. 2	33. 6	45. 1	46. 5	47. 9	49. 3	50. 4	1. 8	3. 4	5. 7	17 47. 79	0. 23	6. 08	11 17 54. 10	11. 69
	Lacaille 4753	18	55. 7	58. 1	59. 5	11. 4	12. 6	14. 0	15. 5	16. 6	28. 2	29. 7	32. 1	21 13. 95	0. 25	6. 08	11 21 20. 28	11. 75
	Lacaille 4766	19	41. 3	43. 9	45. 5	57. 8	59. 1	0. 7	2. 3	3. 5	15. 6	17. 3	19. 7	24 0. 61	0. 26	6. 08	11 24 6. 95	11. 80
	B. A. C. 3928	20	55. 3	57. 8	59. 1	10. 5	11. 7	13. 1	14. 5	15. 6	26. 5	28. 1	30. 5	26 12. 97	0. 21	6. 08	11 26 19. 26	11. 85
	Lacaille 4802	21	28. 0	30. 6	32. 1	43. 9	45. 0	46. 6	48. 0	49. 3	0. 9	2. 5	4. 9	29 46. 53	0. 24	6. 09	11 29 52. 86	11. 91
	Lacaille 4833	22	36. 1	38. 6	40. 0	51. 7	52. 9	54. 4	55. 9	57. 0	8. 5	10. 0	12. 3	32 54. 31	0. 24	6. 09	11 33 0. 64	11. 97
	B. A. C. 3969	23	. .	. .	. .	48. 2	49. 4	50. 7	52. 9	53. 0	. .	. .	. .	34 50. 80	0. 15	6. 09	11 34 57. 04	11. 98
	Lacaille 4877	24	13. 9	16. 4	17. 9	30. 6	31. 9	33. 5	35. 0	36. 4	48. 7	50. 4	52. 8	38 33. 41	+ 0. 27	6. 09	11 38 39. 77	12. 13
	B. A. C. 3988	25	. .	. .	. .	. .	. .	. .	35. 5	38. 4	40. 0	41. 4	43. 2	40 39. 79	— 42. 86	6. 09	11 40 2. 93	12. 17
	Lacaille 4906	26	28. 4	30. 8	31. 1	43. 5	44. 9	46. 3	47. 5	48. 7	0. 0	1. 4	3. 9	43 46. 14	+ 0. 22	6. 09	11 43 52. 45	12. 16
	B. A. C. 4015	†27	38. 7	41. 1	42. 4	54. 0	55. 3	56. 7	58. 1	59. 3	10. 5	12. 2	14. 4	45 56. 61	0. 23	6. 09	11 46 2. 93	12. 21
	B. A. C. 4034	28	35. 5	38. 2	39. 8	52. 2	53. 5	55. 0	56. 6	57. 9	10. 0	11. 6	14. 2	48 55. 14	0. 27	6. 09	11 49 1. 50	12. 35
	Lacaille 4976	29	4. 1	6. 6	8. 0	19. 6	20. 8	22. 2	23. 6	24. 8	36. 1	37. 7	40. 0	54 22. 14	0. 23	6. 10	11 54 28. 47	12. 37
	o Virginis	30	55. 3	57. 4	58. 6	8. 3	9. 4	10. 5	11. 8	12. 8	22. 4	23. 7	25. 8	58 10. 55	0. 06	6. 10	11 58 16. 71	— 12. 07
	Saturn I	31	36. 6	37. 8	39. 0	40. 4	42. 7	. .	42. 9	45. 3	46. 4	47. 6	48. 9	3 12. 76	+ 0. 33	+ 6. 10	12 3 19. 19	. .
	Saturn II	32	59. 2	1. 4	2. 5	12. 1	13. 2	14. 4	15. 4	16. 5	25. 9	27. 3	29. 1	3 14. 27	+ 0. 08	+ 6. 10	12 3 20. 45	. .
	Lacaille 5066	33	9. 4	11. 9	13. 2	24. 8	26. 0	27. 5	28. 8	30. 0	41. 4	43. 0	45. 2	6 27. 38	0. 23	6. 10	12 6 33. 71	— 12. 58
	B. A. C. 4345	34	45. 5	47. 3	49. 0	50. 5	53. 6	. .	11. 0	14. 0	15. 5	17. 0	18. 7	49 32. 21	+ 0. 28	6. 13	12 49 38. 62	11. 59
	α Canum Venat.	35	14. 4	17. 0	18. 5	30. 9	32. 3	33. 8	35. 5	36. 6	48. 8	50. 5	53. 0	49 33. 76	— 0. 04	6. 13	12 49 39. 85	11. 52
	B. Z. 408, 84	36	32. 0	34. 4	45. 7	47. 2	48. 5	49. 8	51. 3	52. 5	3. 7	5. 2	7. 5	53 49. 80	— 0. 02	6. 13	12 53 55. 91	11. 66
	B. A. C. 4378	37	. .	. .	. .	44. 8	46. 1	47. 5	49. 3	50. 6	. .	. .	. .	58 47. 66	+ 0. 22	6. 13	12 58 54. 01	13. 91
	B. A. C. 4405	38	58. 7	1. 5	3. 0	16. 1	17. 3	18. 9	20. 4	21. 7	34. 5	36. 3	38. 9	3 18. 85	0. 29	6. 14	13 3 25. 28	14. 05
	α^1 Ursæ Minoris, S. P.	39	. .	. .	. .	23. 0	. .	54. 0	. .	26. 0	. .	. .	. .	7 54. 33	5. 68	6. 14	1 8 6. 15	27. 26
	Polaris, S. P.	40	. .	. .	. .	48. 0	4. 0	16. 0	31. 0	50. 0	. .	. .	. .	8 17. 80	5. 98	6. 14	1 8 29. 92	27. 69
	Weisse 235	41	47. 7	49. 9	51. 0	0. 6	1. 7	2. 8	4. 2	5. 1	14. 5	15. 8	17. 7	15 2. 82	0. 10	6. 14	13 15 9. 06	12. 45
	α Virginis	42	40. 4	42. 5	43. 8	53. 6	54. 8	55. 9	57. 1	58. 1	7. 7	9. 0	11. 0	17 55. 81	0. 12	6. 14	13 18 2. 07	12. 69
	Jupiter I	43	52. 0	54. 1	55. 3	. .	. .	. .	. .	. .	19. 0	20. 3	22. 2	19 7. 15	0. 11	6. 14	13 19 13. 40	. .
	Jupiter II	44	. .	. .	. .	8. 0	9. 1	10. 2	11. 4	12. 4	. .	. .	. .	19 10. 22	0. 02	6. 14	13 19 16. 38	. .
	B. Z. 464, 125	45	40. 4	42. 8	44. 1	55. 0	56. 2	57. 6	58. 9	0. 1	10. 7	12. 2	14. 4	21 57. 49	0. 00	6. 15	13 22 3. 64	11. 50
	Weisse 392	46	14. 9	16. 9	18. 1	27. 9	28. 9	30. 1	31. 3	32. 3	41. 9	43. 2	45. 2	24 30. 06	0. 06	6. 15	13 24 36. 27	12. 06
	ζ Virginis	47	24. 7	26. 9	27. 9	37. 6	38. 7	39. 9	41. 1	42. 1	51. 5	52. 7	54. 8	27 39. 81	0. 09	6. 15	13 27 46. 05	12. 28
6	ρ Argus	48	21. 9	24. 0	25. 3	35. 8	37. 0	38. 4	39. 6	40. 6	51. 0	52. 4	54. 5	1 38. 23	0. 11	5. 78	8 1 44. 12	9. 08
	η Cancri	49	27. 1	29. 2	30. 4	40. 8	41. 9	43. 2	44. 4	45. 5	55. 6	57. 0	59. 1	24 43. 11	0. 08	5. 77	8 24 48. 96	12. 49
	δ Cancri	50	34. 1	36. 3	37. 5	47. 7	48. 8	50. 0	51. 3	52. 4	2. 3	3. 7	5. 7	36 49. 98	0. 08	5. 77	8 36 55. 83	12. 35
	ε Hydræ	51	12. 2	14. 2	15. 4	25. 1	26. 2	27. 3	28. 6	29. 6	39. 1	40. 4	42. 4	39 27. 32	0. 08	5. 77	8 39 33. 17	11. 55
	60 Cancri	52	7. 4	9. 5	10. 7	20. 6	21. 7	22. 8	24. 1	25. 2	34. 8	36. 1	38. 2	48 22. 83	0. 08	5. 77	8 48 28. 68	11. 94
	κ Cancri	53	0. 4	2. 5	3. 7	13. 5	14. 5	15. 8	17. 0	18. 0	27. 7	29. 0	30. 9	0 15. 73	0. 08	5. 76	9 0 21. 57	11. 91
	Moon I	54	0. 6	2. 7	3. 9	14. 0	15. 0	16. 2	17. 5	18. 5	28. 4	29. 7	31. 7	4 16. 20	0. 08	5. 76	9 4 22. 04	. .
	α Andromedæ	55	56. 7	59. 2	0. 4	11. 4	12. 5	13. 8	15. 2	16. 4	27. 0	28. 7	31. 0	1 13. 85	+ 0. 08	+ 5. 62	0 1 19. 55	— 10. 14

27. Very white.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 25, 8. 2	+ 5. 98	— 0. 032	+ 0. 087
26, 8. 5	+ 5. 77	— 0. 013	+ 0. 087

Date.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. April 26	Polaris	1	16. 0	- -	- -	54. 0	- -	25. 0	- -	52. 0	14. 0	6. 0	25. 0	10 44. 57	− 2 20. 11	+ 5. 60	1 8 30. 06	− 28. 11
27 N.	Sun I	2	- -	- -	- -	19. 2	20. 4	22. 5	37. 8	40. 1	41. 4	42. 6	44. 0	17 33. 50	− 26. 43	5. 58	2 17 12. 65	- -
	Sun II	3	2. 7	4. 8	5. 9	16. 0	17. 0	18. 3	19. 6	20. 6	30. 4	31. 8	33. 7	19 18. 25	+ 0. 08	5. 58	2 19 23. 91	- -
	α Tauri	4	43. 6	45. 5	46. 8	57. 0	57. 9	59. 2	0. 5	1. 4	11. 3	12. 7	14. 7	27 59. 15	0. 08	5. 54	4 28 4. 77	− 11. 27
	Venus I	5	41. 1	43. 4	44. 6	55. 1	56. 3	57. 5	58. 8	59. 9	10. 3	11. 9	13. 8	30 57. 52	0. 08	5. 53	4 31 3. 13	+ 0. 47
	Venus II	†6	18. 3	19. 9	21. 3	22. 5	25. 2	- -	30. 7	33. 3	34. 5	35. 9	37. 4	30 57. 90	0. 35	5. 53	4 31 3. 78	- -
	α Hydræ	7	32. 7	34. 8	36. 0	45. 7	46. 7	48. 0	49. 1	50. 2	59. 7	1. 0	3. 0	20 47. 90	+ 0. 09	5. 45	9 20 53. 44	− 10. 95
	B. A. C. 3153	8	- -	- -	- -	40. 9	42. 4	44. 6	1. 0	3. 5	4. 9	6. 1	7. 7	23 56. 39	− 28. 18	5. 45	9 23 33. 66	10. 06
	Lacaille 3857	9	- -	- -	- -	- -	- -	- -	- -	- -	48. 0	49. 4	51. 5	23 49. 63	14. 46	5. 45	9 23 40. 62	10. 06
	h Leonis	10	- -	- -	- -	45. 4	46. 6	48. 6	3. 8	6. 1	7. 4	8. 5	10. 0	24 59. 55	− 26. 02	5. 45	9 24 38. 98	11. 91
	Lacaille 3928	11	30. 7	32. 9	34. 2	44. 8	45. 9	47. 3	48. 6	49. 7	0. 0	1. 5	3. 7	30 47. 21	+ 0. 11	5. 45	9 30 52. 77	10. 17
	ο Leonis	12	- -	- -	- -	44. 7	45. 8	47. 0	48. 2	49. 2	58. 8	0. 1	2. 1	33 51. 99	− 4. 99	5. 44	9 33 52. 44	11. 94
	ε Leonis	†13	44. 5	46. 8	48. 0	58. 6	59. 8	1. 1	2. 4	3. 3	13. 8	15. 3	17. 4	38 1. 00	+ 0. 08	5. 44	9 38 6. 52	12. 68
	B. A. C. 3385	14	30. 0	32. 3	33. 5	44. 4	45. 5	46. 9	48. 3	49. 3	59. 8	1. 3	3. 5	46 46. 80	0. 11	5. 44	9 46 52. 35	10. 30
	Moon I	15	58. 7	0. 7	1. 9	11. 8	12. 9	14. 0	15. 3	16. 4	26. 1	27. 4	29. 4	52 14. 05	0. 08	5. 44	9 52 19. 57	- -
	Lacaille 4132	16	15. 9	18. 2	19. 5	30. 4	31. 5	32. 9	34. 2	35. 4	45. 9	47. 5	49. 8	58 32. 84	0. 11	5. 44	9 58 38. 39	10. 44
	Lacaille 4134	17	38. 8	41. 2	42. 4	53. 3	54. 4	55. 7	57. 0	58. 4	8. 9	10. 4	12. 6	58 55. 74	0. 11	5. 44	9 59 1. 29	10. 45
	Lacaille 4162	18	1. 8	4. 3	5. 6	17. 3	18. 6	20. 2	21. 6	22. 7	34. 2	35. 6	38. 1	2 20. 00	0. 12	5. 44	10 2 25. 56	10. 18
	Lacaille 4185	19	23. 5	25. 8	27. 3	38. 9	40. 2	41. 5	43. 0	44. 2	55. 5	57. 2	59. 5	5 41. 51	0. 12	5. 44	10 5 47. 07	10. 28
	32 Ursæ Majoris	20	- -	- -	- -	55. 0	57. 5	0. 5	3. 5	5. 8	- -	- -	- -	8 0. 46	0. 04	5. 43	10 8 5. 93	16. 97
	Lacaille 4245	21	43. 8	46. 2	47. 6	59. 3	0. 5	1. 9	3. 3	4. 6	15. 8	17. 6	19. 8	13 1. 85	0. 12	5. 43	10 13 7. 40	10. 41
	Lacaille 4266	22	44. 5	46. 8	48. 2	59. 2	0. 4	1. 7	3. 0	4. 2	15. 0	16. 5	18. 8	16 1. 66	0. 11	5. 43	10 16 7. 20	10. 67
	Lacaille 4286	23	44. 9	47. 2	48. 6	59. 6	0. 8	2. 1	3. 4	4. 6	15. 3	16. 8	19. 1	19 2. 04	0. 11	5. 43	10 19 7. 58	10. 73
	B. A. C. 3596	24	49. 4	51. 6	52. 9	4. 0	5. 2	6. 6	7. 9	9. 2	19. 8	21. 4	23. 6	23 6. 51	0. 11	5. 43	10 23 12. 05	10. 78
	ρ Leonis	25	17. 4	19. 5	20. 7	30. 5	31. 6	32. 7	34. 0	35. 0	44. 6	45. 9	47. 9	25 32. 71	0. 08	5. 43	10 25 38. 22	12. 02
	Lacaille 4393	26	58. 6	0. 9	2. 2	12. 9	14. 0	15. 3	16. 7	17. 8	28. 3	29. 8	32. 0	34 15. 32	+ 0. 11	5. 43	10 34 20. 86	11. 05
	Lacaille 4481	27	- -	- -	- -	30. 7	32. 2	35. 0	55. 0	58. 0	59. 6	1. 1	3. 0	43 49. 32	− 34. 21	5. 42	10 43 20. 53	10. 78
	Lacaille 4508	†28	15. 2	18. 1	19. 6	32. 5	33. 9	35. 6	37. 4	38. 7	51. 3	53. 1	55. 7	47 35. 55	+ 0. 14	5. 42	10 47 41. 11	10. 87
	* — 41° 18′	29	3. 9	6. 7	8. 1	20. 9	22. 2	23. 9	25. 6	26. 9	39. 6	41. 4	43. 9	50 23. 92	0. 14	5. 42	10 50 29. 48	10. 96
	α Ursæ Majoris	30	40. 0	44. 3	46. 9	7. 8	10. 0	12. 6	15. 3	17. 4	37. 8	40. 7	45. 0	55 12. 53	0. 14	5. 42	10 55 18. 09	14. 84
	Lacaille 4642	31	18. 6	21. 0	22. 4	33. 7	35. 0	36. 5	37. 9	38. 9	50. 1	51. 6	53. 9	5 36. 33	+ 0. 12	5. 42	11 5 41. 87	11. 46
	δ Leonis	32	- -	- -	- -	44. 0	45. 2	46. 4	47. 7	48. 7	58. 9	0. 3	2. 3	6 51. 69	− 5. 27	5. 42	11 6 51. 84	12. 36
	Lacaille 4687	33	40. 6	42. 9	44. 4	55. 8	57. 0	58. 5	59. 9	1. 1	12. 4	14. 0	16. 2	10 58. 44	+ 0. 12	5. 42	11 11 3. 98	11. 54
	Lacaille 4709	34	31. 3	33. 7	35. 0	46. 4	47. 6	49. 0	50. 4	51. 5	2. 7	4. 1	6. 3	13 48. 91	0. 12	5. 41	11 13 54. 44	11. 61
	λ Draconis,	35	28. 3	34. 1	37. 7	6. 0	8. 9	12. 6	16. 0	18. 9	46. 7	50. 6	56. 3	23 12. 37	0. 18	5. 41	11 23 17. 96	15. 19
	γ Cephei, S. P.	36	45. 0	35. 9	30. 8	48. 4	43. 6	38. 7	33. 2	28. 7	47. 3	41. 4	32. 8	33 38. 71	0. 27	5. 41	23 33 44. 39	5. 77
	Lacaille 4890	37	5. 3	7. 7	9. 0	20. 0	21. 4	22. 7	24. 0	25. 2	36. 0	37. 5	39. 8	40 22. 60	+ 0. 11	5. 41	11 40 28. 12	12. 06
	β Leonis	38	- -	- -	- -	13. 7	15. 0	17. 0	32. 5	34. 9	36. 2	37. 4	38. 7	42 28. 18	− 26. 54	5. 41	11 42 7. 05	12. 02
	Lacaille 5117 (?)	†39	41. 0	43. 6	45. 0	57. 2	58. 7	0. 2	1. 6	2. 9	14. 8	16. 5	18. 9	15 0. 04	+ 0. 13	5. 40	12 15 5. 57	12. 85
	Lacaille 5176	40	30. 0	32. 3	33. 7	45. 0	46. 3	47. 6	49. 0	50. 2	1. 2	2. 8	5. 1	22 47. 56	0. 12	5. 39	12 22 53. 07	12. 80
	κ Draconis	41	50. 5	56. 5	0. 0	29. 0	32. 3	35. 6	39. 3	42. 3	10. 5	14. 6	20. 7	27 35. 57	0. 18	5. 39	12 27 41. 14	12. 15
	α Can. Venat.	42	15. 1	17. 8	19. 3	31. 7	33. 0	34. 6	36. 1	37. 3	49. 5	51. 2	53. 8	49 34. 49	+ 0. 09	5. 39	12 49 39. 97	11. 52
	Polaris, S. P.	43	- -	- -	- -	56. 0	12. 5	26. 5	36. 0	57. 0	- -	- -	- -	8 25. 60	− 0. 52	5. 38	1 8 30. 46	28. 25
	Jupiter I	44	59. 1	1. 2	2. 4	12. 0	13. 2	14. 3	15. 6	16. 5	26. 0	27. 3	29. 4	18 14. 27	+ 0. 09	5. 38	13 18 19. 74	- -
	Jupiter II	45	40. 5	41. 8	43. 2	44. 5	46. 9	- -	47. 3	49. 6	50. 9	52. 0	53. 4	18 17. 01	0. 34	5. 38	13 18 22. 73	- -
30 Y.	Weisse 429	46	18. 1	20. 2	21. 4	31. 0	32. 0	33. 2	34. 4	35. 4	44. 9	46. 1	48. 1	25 33. 16	0. 10	4. 86	11 25 38. 12	11. 98
	Weisse 438	47	- -	- -	- -	56. 1	57. 2	58. 3	59. 5	0. 5	- -	- -	- -	25 58. 32	0. 05	4. 86	11 26 3. 23	11. 98
	υ Leonis	48	38. 8	40. 9	42. 0	51. 8	52. 9	53. 9	55. 2	56. 1	5. 6	6. 9	8. 9	29 53. 91	0. 10	4. 86	11 29 58. 87	11. 98
	B. A. C. 3962	49	5. 3	7. 4	8. 5	18. 3	19. 3	20. 4	21. 8	22. 7	32. 0	33. 5	35. 4	33 20. 42	0. 10	4. 87	11 33 25. 39	12. 00
	Weisse 624	50	1. 6	3. 7	4. 9	14. 6	15. 6	16. 8	18. 0	19. 0	28. 5	29. 8	31. 7	36 16. 75	0. 10	4. 87	11 36 21. 72	12. 01
	B. Z. 359, 32	51	3. 1	5. 6	7. 1	19. 2	20. 5	22. 0	23. 4	24. 7	36. 6	38. 2	40. 5	38 21. 90	+ 0. 07	4. 87	11 38 26. 84	12. 41
	B. Z. 456, 121	52	- -	- -	- -	7. 6	9. 0	11. 0	26. 8	29. 0	30. 3	31. 5	33. 0	42 22. 28	− 26. 75	4. 87	11 42 0. 40	12. 12
	B. A. C. 4006	53	44. 8	47. 0	48. 1	57. 7	58. 9	0. 0	1. 1	2. 2	11. 7	12. 9	14. 9	43 59. 94	+ 0. 11	4. 87	11 44 4. 92	12. 03
	Weisse 895	54	- -	- -	- -	29. 1	30. 2	31. 4	32. 5	33. 5	- -	- -	- -	52 31. 34	+ 0. 05	+ 4. 88	11 52 36. 27	− 12. 07

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 27, 8. 7	+ 5. 46	− 0. 018	+ 0. 087

6. The limb not well defined.
13. Field too dark.
28. Hazy and faint; uncertain.
39. Lac. is 4′ greater in Dec. and 16s. less in A. R.

April 26–27. n. = − 0. 027 s.

E.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII. 32.5	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1810.0
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
30	Weisse 980 . . .	1	15.7	17.0	18.4	19.6	22.0	. .	23.0	25.2	26.6	27.7	29.0	57 52.42	+ 0.36	+ 4.88	11 57 57.66	— 12.08
	o Virginis	2	34.7	36.0	37.4	38.6	41.0	. .	41.9	44.3	45.6	46.7	48.2	58 11.44	0.36	4.88	11 58 16.68	12.03
	Saturn I . . .	3	0.4	2.3	3.5	13.1	14.1	15.2	16.5	17.5	27.0	28.3	30.4	2 15.30	0.10	4.88	12 2 20.28	. .
	Saturn II . . .	4	40.1	41.4	42.6	44.0	46.4	. .	46.5	48.7	49.9	51.0	52.6	2 16.32	0.35	4.88	12 2 21.55	. .
	Weisse 49 . . .	5	14.0	16.1	17.3	27.2	28.2	29.4	30.5	31.6	41.0	42.3	44.3	4 29.27	0.09	4.88	12 4 34.24	12.08
	Weisse 144 . . .	6	9.8	12.0	13.0	22.8	23.9	25.0	26.3	27.2	36.8	38.2	40.1	10 25.01	0.09	4.88	12 10 29.98	12.09
	η Virginis	7	36.8	39.0	40.0	49.6	50.6	51.8	53.1	54.0	3.6	4.7	6.7	12 51.81	0.10	4.89	12 12 56.80	12.13
	Weisse 261 . . .	8	27.7	29.9	31.2	41.0	42.0	43.2	44.4	45.4	55.3	56.6	58.7	16 43.22	0.08	4.89	12 16 48.19	12.06
	Moon I	9	23.7	25.8	27.0	37.0	38.2	39.4	40.5	41.6	51.4	52.6	54.5	20 39.25	0.11	4.89	12 20 44.25	. .
	q Virginis	10	25.5	27.5	28.7	38.4	39.7	40.7	42.0	42.9	52.6	54.0	55.9	26 40.72	0.11	4.89	12 26 45.72	12.33
	Weisse 461 . . .	11	. .	. .	. .	7.9	8.9	10.1	11.4	12.4	. .	. .	. .	28 10.14	0.07	4.89	12 28 15.10	12.03
	χ Virginis	12	53.5	55.6	56.8	6.5	7.5	8.7	10.0	11.0	20.5	21.7	23.7	32 8.68	+ 0.11	4.89	12 32 13.68	12.33
	Lalande 23763 . .	13	. .	. .	. .	12.5	13.8	15.8	31.2	33.5	34.9	36.0	37.6	38 26.91	— 26.40	4.90	12 38 5.41	12.01
	Weisse 736 . . .	14	25.6	27.6	28.7	38.4	39.4	40.5	41.7	42.8	52.3	53.6	55.5	43 40.55	+ 0.10	4.90	12 43 45.55	12.25
	Ψ Virginis	15	56.7	58.7	59.9	9.9	10.9	12.0	13.3	14.3	23.8	25.1	27.3	47 11.99	0.11	4.90	12 47 17.00	12.46
	Weisse 878 . . .	16	40.7	42.8	44.0	53.6	54.8	55.9	57.1	58.2	7.5	9.0	10.7	51 55.85	0.10	4.90	12 52 0.85	12.30
	Weisse 918 . . .	17	57.0	59.1	0.3	10.1	11.2	12.3	13.5	14.5	24.1	25.4	27.4	54 12.26	+ 0.12	4.90	12 54 17.28	12.55
	Polaris, S. P. . .	†18	36.0	12.0	23.0	54.0	14.0	25.0	36.0	55.0	37.0	46.0	24.0	8 27.45	— 0.93	4.91	1 8 31.43	29.14
	ζ Virginis	19	26.0	28.1	29.1	38.8	39.9	40.9	42.1	43.2	52.8	53.9	56.0	27 40.98	+ 0.10	4.92	13 27 46.00	12.29
	* + 77° 0′ 30″ . .	20	. .	. .	. .	56.7	1.4	6.5	12.2	16.7	. .	. .	. .	32 6.70	— 0.10	4.92	13 32 11.52	7.52
	B. Z. 462, 49 . .	†21	28.3	30.9	32.1	42.8	43.8	45.0	46.3	47.5	58.0	59.4	1.7	37 45.07	+ 0.07	4.92	13 37 50.06	11.44
	B. Z. 414, 16 . .	22	45.4	48.0	49.3	1.0	2.2	3.7	5.1	6.3	17.7	19.2	21.8	41 3.61	0.07	4.93	13 41 8.61	11.11
	Rumker 4483 . .	23	55.5	57.7	58.9	8.8	9.9	11.0	12.2	13.2	23.0	24.3	26.2	44 10.97	0.08	4.93	13 44 15.98	11.91
	Rumker 4501 . .	24	17.7	19.8	21.0	30.9	32.0	33.3	34.4	35.4	45.2	46.5	48.6	46 33.16	0.08	4.93	13 46 38.17	11.86
	Weisse 794 . . .	25	. .	. .	. .	58.7	59.7	0.9	2.2	3.1	. .	. .	. .	47 0.92	0.03	4.93	13 47 5.88	11.86
	B. Z. 462, 67 . .	26	33.2	35.6	37.0	47.7	49.0	50.3	51.7	52.8	3.4	4.8	7.0	49 50.23	0.07	4.93	13 49 55.23	11.33
	Σ. C. Gen. 1570 (1st*)	27	28.6	30.8	32.0	. .	. .	. .	. .	. .	58.5	59.9	2.2	52 45.37	0.11	4.93	13 52 50.41	11.31
	Σ. C. Gen. 1570 (2d*)	28	. .	. .	. .	43.3	44.6	45.9	47.2	48.2	. .	. .	. .	52 45.84	0.02	4.93	13 52 50.79	11.31
	Lacaille 5822 . .	29	41.6	44.2	45.4	57.3	58.6	0.1	1.6	2.8	14.2	15.8	18.2	58 59.98	0.18	4.94	13 59 5.10	14.49
	Lacaille 5839 . .	30	. .	. .	. .	47.5	48.8	50.3	51.5	52.7	. .	. .	. .	2 59.16	0.11	4.94	14 2 55.21	14.26
	Lacaille 5843 . .	31	8.9	11.4	12.7	24.3	25.2	26.7	28.1	29.3	40.5	41.9	44.2	3 26.65	0.17	4.94	14 3 31.76	14.28
	Lacaille 5873 . .	32	57.2	59.8	1.0	12.4	13.6	15.0	16.3	17.6	28.7	30.1	32.4	8 14.92	0.17	4.94	14 8 20.03	14.33
	Lacaille 5886 . .	33	47.5	50.2	51.5	3.6	5.0	6.3	7.9	9.2	20.9	22.4	24.9	11 6.31	0.18	4.94	14 11 11.43	14.80
	B. A. C. 4757 . .	34	48.1	50.6	52.1	3.8	5.1	6.6	8.1	9.2	20.5	22.2	24.6	14 6.45	0.17	4.94	14 14 11.56	14.62
	Lacaille 5932 . .	35	3.0	5.3	6.8	18.3	19.6	21.0	22.3	23.4	34.6	36.2	38.4	17 20.81	0.17	4.94	14 17 25.92	14.51
	Lacaille 5955 . .	†36	. .	. .	. .	49.5	50.8	52.2	54.0	55.4	. .	. .	. .	21 52.38	0.14	4.95	14 21 57.47	15.32
	Lacaille 5975 . .	37	. .	. .	. .	47.0	48.4	49.7	51.2	52.4	. .	. .	. .	23 49.72	0.11	4.95	14 23 54.80	14.52
	Lacaille 5988 . .	38	36.9	39.4	40.8	52.2	53.4	54.6	56.2	57.3	. .	. .	. .	25 48.85	5.98	4.95	14 25 59.78	14.53
	Lacaille 6020 . .	39	45.0	47.6	49.2	0.6	2.0	3.5	5.0	6.2	17.5	19.3	21.5	30 3.40	0.18	4.95	14 30 8.53	14.88
	* — 32° 9′ . . .	40	. .	. .	. .	40.7	41.9	43.4	44.6	45.8	. .	. .	. .	33 43.28	0.11	4.95	14 33 48.34	14.67
	Lacaille 6054 . .	41	14.9	16.3	18.0	19.5	22.3	. .	33.4	36.0	37.6	38.8	40.4	33 57.72	0.47	4.95	14 34 3.14	14.68
	ε Bootis, (Comp.) .	42	17.0	18.5	20.0	21.5	24.2	. .	31.8	34.6	36.0	37.2	38.7	38 57.95	0.35	4.95	14 39 3.25	10.89
	ε Bootis	†43	41.3	43.7	45.0	55.7	56.9	58.2	59.7	0.8	11.6	13.1	15.2	38 58.29	0.07	4.95	14 39 3.31	10.90
	α Libræ	†44	1.0	3.2	4.4	14.4	15.5	16.7	17.9	19.0	28.7	30.1	32.0	43 16.63	0.12	4.95	14 43 21.70	13.40
	α Andromedæ . .	45	57.8	0.2	1.5	12.4	13.6	15.0	16.3	17.5	28.2	29.6	31.9	1 14.91	+ 0.11	4.54	0 1 19.56	10.23
	α Cassiopeæ . . .	46	. .	. .	. .	1.4	4.2	7.5	33.8	38.0	40.1	42.3	44.8	33 26.51	— 45.49	4.54	0 32 45.56	10.61
	β Ceti	47	22.8	25.0	26.3	36.5	37.6	38.8	40.2	41.2	51.1	52.4	54.5	36 38.76	+ 0.11	4.54	0 36 43.41	9.71
	Polaris	48	. .	. .	. .	55.0	39.0	26.0	13.0	54.0	. .	. .	. .	8 25.40	2.14	4.54	1 8 32.08	29.76
1	Lacaille 4387 . .	49	. .	. .	43.3	45.8	47.2	. .	. .	. .	. .	. .	. .	32 45.43	16.58	4.63	10 33 6.64	10.67
	α Ursæ Majoris . .	50	. .	. .	. .	8.5	10.7	13.2	15.9	18.0	. .	. .	. .	55 13.26	0.08	4.62	10 55 17.96	14.71
	χ Leonis	51	39.6	41.7	42.8	52.6	53.7	54.9	56.1	57.1	6.7	8.0	9.9	57 54.83	0.11	4.62	10 57 59.56	11.90
	Lacaille 4655 . .	52	36.2	38.5	39.8	50.3	51.6	52.9	54.3	55.4	5.7	7.2	9.4	7 52.85	0.14	4.62	11 7 57.61	11.53
	δ Crateris	53	12.2	14.2	15.5	25.4	26.4	27.7	28.9	29.9	39.6	41.0	43.0	12 27.62	0.12	4.62	11 12 32.36	11.69
	Lacaille 4713 . .	54	. .	. .	. .	27.8	29.0	30.4	31.9	33.1	. .	. .	. .	14 30.44	0.10	4.62	11 14 35.16	11.54
	λ Draconis . . .	55	. .	. .	. .	6.6	9.6	13.3	16.8	19.6	. .	. .	. .	23 13.18	+ 0.10	+ 4.62	11 23 17.90	— 15.02

18. Unsteady.
21. Poor observation.
36. Faint.
43. Unsteady.
44. Unsteady.

		r.	
April 30, 14h. 50m.	Image east	0.03.	Clamp west.
15h. 10m.	Image west	0.20.	Clamp east.
20m.	Image west	0.20.	Clamp east.
30m.	Image east	0.03.	Clamp west.

April 30. n. = — 0.077. (s.)
May 1. — 0.030.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
April 30, 13.1	+ 4.91	+ 0.028	+ 0.100
0.3	4.54	0.000	. .
May 1, 12.1	+ 4.62	— 0.004	+ 0.110

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 1	B. A. C. 8213, S. P.	1	. .	. .	. .	13. 7	56. 3	36. 5	16. 3	0. 3	. .	. .	. .	27 36. 62	— 0. 54	+ 4. 62	23 27 40. 70	+ 10. 37
	υ Leonis	2	. .	. .	. .	51. 9	53. 0	54. 2	55. 4	56. 3	5. 8	7. 1	9. 0	29 59. 09	4. 87	4. 62	11 29 58. 84	— 11. 97
	γ Cephei, S. P.	†3	46. 3	37. 2	31. 8	49. 3	44. 7	40. 0	34. 2	30. 0	48. 6	43. 0	34. 3	33 39. 95	0. 35	4. 62	23 33 44. 22	5. 95
N.	B. A. C. 8314, S. P.	4	0. 8	53. 3	49. 2	15. 0	11. 3	6. 9	2. 7	59. 2	25. 8	21. 2	14. 2	48 7. 24	0. 29	4. 62	23 48 11. 57	7. 85
	B. A. C. 4042	5	37. 1	39. 4	40. 6	51. 3	52. 5	53. 8	55. 0	56. 3	6. 6	8. 1	10. 2	51 53. 72	+ 0. 14	4. 62	11 51 58. 48	12. 18
	Lacaille 4976	6	. .	. .	. .	21. 1	22. 2	23. 7	25. 2	26. 3	. .	. .	. .	54 23. 70	0. 09	4. 62	11 54 28. 41	12. 32
	o Virginis	7	56. 7	58. 7	59. 9	9. 7	10. 8	12. 0	13. 1	14. 2	23. 8	25. 1	27. 0	58 11. 91	0. 11	4. 62	11 58 16. 64	12. 03
	Saturn I	8	49. 5	51. 7	52. 9	. .	. .	. .	. .	. .	16. 3	17. 6	19. 7	1 4. 62	0. 15	4. 62	12 1 9. 39	- -
	Saturn II	9	. .	. .	. .	3. 6	4. 8	5. 9	7. 1	8. 1	. .	. .	. .	1 5. 90	0. 06	4. 62	12 1 10. 58	- -
	4 Draconis	10	. .	. .	. .	33. 9	39. 3	45. 0	50. 8	55. 8	. .	. .	. .	5 44. 96	0. 17	4. 62	12 5 49. 75	14. 30
	η Virginis	11	37. 0	39. 0	40. 3	50. 0	50. 9	52. 2	53. 3	54. 3	3. 8	5. 0	7. 0	12 52. 07	0. 11	4. 62	12 12 56. 80	12. 13
	Lacaille 5125	12	34. 6	36. 8	38. 0	48. 6	49. 8	51. 1	52. 4	53. 5	3. 7	5. 2	7. 4	15 51. 01	0. 13	4. 62	12 15 55. 76	12. 50
	6 Corvi	13	55. 5	57. 7	58. 9	9. 7	10. 8	12. 1	13. 4	14. 5	24. 8	26. 3	28. 5	16 12. 02	0. 13	4. 62	12 16 16. 77	12. 50
	B. A. C. 4192	14	. .	. .	. .	35. 0	36. 2	37. 6	39. 0	40. 3	. .	.	. .	19 37. 62	0. 10	4. 62	12 19 42. 34	12. 75
	Lacaille 5176	15	30. 7	33. 0	34. 4	45. 7	46. 8	48. 4	49. 7	50. 9	1. 9	3. 4	5. 6	22 48. 27	0. 15	4. 62	12 22 53. 04	12. 78
	κ Draconis	16	51. 0	57. 3	0. 7	29. 7	32. 9	36. 4	40. 0	43. 0	11. 3	15. 3	21. 2	27 36. 25	0. 24	4. 62	12 27 41. 11	12. 03
	Lacaille 5230	17	49. 2	51. 4	52. 8	3. 7	4. 9	6. 3	7. 7	8. 8	19. 6	21. 0	23. 3	32 6. 25	0. 14	4. 62	12 32 11. 01	12. 85
	Lacaille 5232	18	. .	. .	. .	27. 4	28. 7	30. 0	31. 3	32. 4	. .	. .	. .	32 29. 96	+ 0. 09	4. 62	12 32 34. 67	12. 86
	21 Cassiopeæ, S. P.	19	30. 3	22. 9	18. 5	42. 7	39. 0	34. 6	30. 0	26. 5	50. 5	46. 8	39. 5	36 34. 66	— 0. 30	4. 62	0 36 38. 98	10. 69
	B. A. C. 4297	20	50. 2	52. 5	53. 8	4. 6	5. 7	7. 2	8. 5	9. 6	20. 2	21. 7	23. 8	41 7. 07	+ 0. 14	4. 62	12 41 11. 83	12. 92
	Lacaille 5304	21	20. 9	23. 1	24. 5	35. 1	36. 4	37. 6	39. 0	40. 1	50. 7	52. 0	54. 3	44 37. 61	0. 14	4. 62	12 44 42. 37	12. 93
	ψ Virginis	22	57. 0	59. 0	0. 4	10. 1	11. 2	12. 4	13. 5	14. 6	24. 1	25. 5	27. 4	47 12. 29	0. 11	4. 62	12 47 17. 02	12. 46
	Lacaille 5348	23	12. 9	15. 3	16. 7	27. 5	29. 0	30. 3	31. 7	32. 8	43. 6	45. 0	47. 3	51 30. 19	0. 14	4. 62	12 51 34. 95	13. 16
	Lacaille 5374	24	37. 6	39. 9	41. 3	52. 3	53. 5	54. 8	56. 2	57. 3	8. 2	9. 7	11. 8	55 54. 78	0. 14	4. 62	12 55 59. 54	13. 21
	Lacaille 5405	25	50. 0	52. 3	53. 7	4. 8	6. 0	7. 3	8. 8	9. 9	20. 8	22. 3	24. 6	0 7. 32	0. 14	4. 62	13 0 12. 08	13. 30
	Lacaille 5428	26	54. 5	56. 7	58. 1	8. 8	10. 0	11. 4	12. 7	13. 8	24. 2	25. 7	27. 9	4 11. 25	0. 14	4. 62	13 4 16. 01	13. 18
	Polaris, S. P.	27	. .	. .	. .	59. 0	16. 5	29. 0	40. 0	0. 5	. .	. .	. .	8 29. 00	1. 33	4. 62	1 8 32. 29	30. 01
	Moon I	28	21. 8	24. 0	25. 3	35. 4	36. 5	37. 7	39. 0	40. 0	49. 9	51. 2	53. 3	14 37. 65	0. 12	4. 62	13 14 42. 39	- -
	Jupiter I	29	16. 1	18. 1	19. 3	29. 0	30. 1	31. 2	32. 4	33. 5	43. 0	44. 3	46. 2	16 31. 20	0. 11	4. 62	13 16 35. 93	- -
	Jupiter II	30	57. 5	58. 8	0. 1	1. 4	3. 8	. .	4. 2	6. 5	7. 7	8. 9	10. 3	16 33. 92	+ 0. 36	4. 62	13 16 38. 90	- -
	α Virginis	31	. .	. .	. .	55. 0	56. 1	57. 3	58. 6	59. 6	9. 2	10. 4	12. 4	18 2. 33	— 4. 95	4. 62	13 18 2. 00	12. 70
	h Virginis	32	28. 5	30. 6	31. 8	41. 5	42. 6	43. 9	45. 1	46. 1	55 7	57. 0	59. 0	25 43. 80	+ 0. 12	4. 61	13 25 48. 53	12. 70
	ζ Virginis	33	. .	. .	. .	39. 0	40. 2	41. 3	42. 5	43. 5	53. 0	54. 3	56. 3	27 46. 26	— 4. 87	4. 61	13 27 46. 00	12. 29
	α Andromedæ	34	. .	. .	. .	. .	. .	. .	48. 7	51. 4	52. 6	54. 2	55. 6	1 52. 50	— 37. 55	4. 73	0 1 19. 68	10. 25
	Polaris	†35	18. 0	40. 5	26. 0	57. 0	37. 0	27. 5	15. 0	54. 5	. .	. .	. .	5 4. 44	+ 3 23. 17	4. 73	1 8 32. 34	30. 26
May 2	Sun I	36	. .	. .	. .	5. 3	6. 5	7. 6	8. 8	9. 8	. .	. .	. .	36 7. 60	+ 0. 08	4. 72	2 36 12. 40	- -
	Sun II	37	4. 0	6. 2	7. 4	17. 5	18. 6	19. 6	21. 0	22. 2	31. 9	33. 0	35. 1	38 19. 68	+ 0. 13	4. 72	2 38 24. 53	- -
Y.	Venus I	†38	1. 8	3. 2	4. 6	6. 0	8. 5	25. 3	27. 4	28. 8	. .	. .	.	56 13. 20	28. 75	4. 70	4 56 46. 65	+ 0. 48
	α Aurigæ	39	. .	. .	. .	27. 7	29. 2	30. 9	32. 6	34. 2	. .	. .	. .	7 30. 92	0. 12	4. 70	5 7 35. 74	14. 52
	β Tauri	40	17. 3	19. 7	21. 0	32. 0	33. 2	34. 5	35. 9	37. 0	47. 8	49. 2	51. 4	17 34. 45	0. 14	4. 70	5 17 39. 29	12. 56
	δ Orionis	†41	41. 6	43. 7	45. 0	54. 5	55. 6	56. 7	57. 9	58. 9	. .	. .	. .	24 51. 74	5. 07	4. 70	5 25 1. 51	10. 08
	γ Ursæ Majoris	42	9. 1	12. 7	14. 5	31. 1	33. 0	35. 0	37. 0	38. 9	54. 9	57. 4	0. 7	46 34. 94	0. 24	4. 66	11 46 39. 84	12. 79
	b Virginis	43	38. 8	40. 8	42. 1	51. 8	52. 8	54. 0	55. 2	56. 2	5. 7	6. 9	8. 9	52 53. 93	+ 0. 12	4. 66	11 52 58. 71	12. 06
	67 Ursæ Majoris	44	. .	. .	. .	23. 3	25. 0	27. 7	48. 5	51. 6	53. 3	54. 9	56. 9	55 42. 65	— 35. 42	4. 66	11 55 11. 89	12. 30
	o Virginis	45	56. 6	58. 6	59. 9	9. 7	10. 7	11. 9	13. 1	14. 2	23. 6	25. 0	26. 9	58 11. 84	+ 0. 12	4. 66	11 58 16. 62	12. 02
	ε Corvi	46	47. 0	49. 2	50. 5	1. 0	2. 0	3. 3	4. 7	5. 6	16. 0	17. 2	19. 4	3 3. 26	0. 12	4. 66	12 3 8. 04	12. 29
	δ Ursæ Majoris	47	8. 0	11. 8	14. 1	32. 2	34. 0	36. 4	38. 5	40. 5	58. 2	0. 7	4. 2	8 36. 24	0. 25	4. 66	12 8 41. 15	12. 33
	c Virginis	48	6. 5	8. 6	9. 8	19. 4	20. 6	21. 7	22. 8	23. 9	33. 4	34. 6	36. 6	13 21. 63	0. 12	4. 66	12 13 26. 41	12. 11
	73 Ursæ Majoris	49	34. 5	38. 0	40. 1	57. 8	59. 7	1. 8	4. 0	5. 8	23. 0	25. 2	28. 8	21 1. 70	0. 25	4. 66	12 21 6. 61	11. 98
	κ Draconis	50	50. 9	57. 0	0. 5	29. 4	32. 5	36. 2	40. 0	42. 8	11. 4	15. 2	21. 0	27 36. 08	+ 0. 41	4. 66	12 27 41. 15	11. 99
	α Can. Venat.	51	. .	. .	. .	50. 0	51. 7	54. 1	13. 5	16. 4	18. 0	19. 4	21. 3	50 8. 05	— 32. 90	4. 66	12 49 39. 81	11. 48
	78 Ursæ Majoris	52	21. 2	25. 0	27. 1	45. 0	46. 7	49. 1	51. 3	53. 1	10. 4	12. 9	16. 5	54 48. 94	+ 0. 25	4. 66	12 54 53. 85	11. 11
	Polaris, S. P.	†53	2. 0	20. 0	29. 5	43. 0	3. 5	41. 0	49. 0	30. 5	. .	. .	. .	5 12. 31	3 15. 60	4. 66	1 8 32. 57	30. 54
	Jupiter I	54	51. 0	52. 9	54. 0	.	. .	. .	. .	. .	17. 8	19. 0	21. 0	16 5. 95	0. 16	4. 65	13 16 10. 76	- -
	Jupiter II	55	. .	. .	.	6. 7	7. 9	9. 1	10. 2	11. 2	. .	. .	. .	16 9. 02	+ 0. 07	4. 65	13 16 13. 74	. .

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 2, 10. 6	+ 4. 67	— 0. 006	+ 0. 117

3. Fine observation.
35. Cloudy.
38. Cloudy.
41. Faint.
53. Steady.

May 2. n. = + 0. 020 s.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 2	α Virginis	1	41.9	44.0	45.2	55.0	56.1	57.3	58.4	59.4	9.1	10.5	12.4	17 57.21	+ 0.12	− 4.65	13 18 1.98	− 12.70
	h Virginis	2	28.5	30.6	31.8	41.5	42.6	43.8	45.0	46.1	55.7	56.9	58.9	25 43.76	0.12	4.65	13 25 48.53	12.70
	B. A. C. 4547	3	. .	. .	. .	38.2	39.4	40.6	41.8	42.8	. .	. .	. .	30 40.56	0.07	4.65	13 30 45.28	12.46
Y.	m Virginis	4	8.7	10.9	12.0	21.7	22.8	23.9	25.2	26.1	35.8	37.0	38.9	34 23.91	0.12	4.65	13 34 28.68	12.69
	Weisse 651	5	40.8	42.3	43.4	44.7	47.3	. .	48.7	51.0	52.2	53.4	54.8	38 17.86	0.37	4.65	13 38 22.88	12.87
	86 Virginis	6	59.8	1.1	2.4	3.7	6.2	. .	7.5	9.9	11.1	12.2	13.8	38 36.77	0.37	4.65	13 38 41.79	12.87
	89 Virginis	7	8.8	10.9	12.2	22.3	23.5	24.7	25.9	26.9	36.8	38.3	40.3	42 24.60	0.12	4.65	13 42 29.37	13.17
	Rumker 4501	8	17.8	20.0	21.2	31.2	32.3	33.5	34.6	35.7	45.3	46.7	48.8	46 33.37	0.13	4.65	13 46 38.15	11.87
	Weisse 794	9	. .	. .	. .	58.7	59.8	1.0	2.3	3.4	. .	. .	. .	47 1.04	0.08	4.65	13 47 5.77	11.87
	Lacaille 5774	10	1.4	3.8	5.1	16.2	17.5	18.8	20.1	21.2	32.0	33.4	35.7	50 18.65	0.12	4.65	13 50 23.42	13.95
	B. A. C. 4671	11	17.8	20.0	21.3	32.1	33.3	34.6	36.0	37.0	47.7	49.0	51.3	54 34.55	0.12	4.65	13 54 39.32	13.84
	π Hydræ	12	16.5	19.0	20.3	31.0	32.1	33.4	34.7	35.8	46.5	47.8	50.0	58 33.37	0.12	4.65	13 58 38.14	13.83
	Lacaille 5838	13	8.9	11.3	12.8	23.8	25.0	26.3	27.8	28.9	39.8	41.3	43.4	2 26.30	0.12	4.65	14 2 31.07	14.11
	κ Virginis	14	18.7	20.8	22.0	31.8	32.9	34.0	35.4	36.3	45.8	47.0	49.2	5 33.99	0.12	4.65	14 5 38.76	12.91
	Lacaille 5873	15	. .	. .	. .	12.5	13.7	15.2	16.5	17.7	. .	. .	. .	8 15.12	0.06	4.65	14 8 19.83	14.34
	Moon I	16	51.2	53.4	54.6	5.0	6.1	7.3	8.5	9.8	19.9	21.3	23.4	12 7.32	0.12	4.65	14 12 12.09	. .
	Weisse 252	17	42.6	44.7	45.8	55.7	56.8	57.9	59.2	0.1	9.8	11.0	13.0	14 57.87	0.12	4.65	14 15 2.64	12.93
	Lacaille 5941	18	58.6	1.0	2.5	14.0	15.2	16.6	18.1	19.2	30.4	31.9	34.2	18 16.52	0.13	4.65	14 18 21.30	14.57
	Lacaille 5956	19	20.2	22.5	23.7	34.4	35.6	36.9	38.2	39.3	49.8	51.2	53.4	21 36.84	0.12	4.65	14 21 41.61	14.00
	Lacaille 5979	20	58.1	0.5	1.8	12.6	13.9	. .	. .	. .	. .	. .	. .	24 5.38	9.74	+ 4.65	14 24 19.77	14.09
	Lacaille 6000	21	28.4	31.1	32.5	44.3	45.6	47.2	48.6	49.8	1.4	2.7	5.1	27 46.98	0.13	4.65	14 27 51.75	14.83
	Lacaille 6020	22	45.4	48.0	49.2	0.9	2.3	3.6	5.1	6.5	17.8	19.4	21.8	30 3.65	0.13	4.65	14 30 8.43	14.92
	Lacaille 6054	23	40.5	43.0	44.2	55.6	56.8	58.4	59.8	1.0	12.2	13.6	16.0	33 58.28	0.13	4.65	14 34 3.06	14.70
	α¹ Libræ	24	27.6	29.0	30.3	31.7	34.2	. .	36.4	38.8	40.2	41.2	42.7	43 5.21	0.38	4.65	14 43 10.24	13.43
	α Libræ	25	1.3	3.5	4.7	14.8	15.9	17.0	18.3	19.3	29.0	30.4	32.4	43 16.96	0.12	4.65	14 43 21.73	13.42
	B. A. C. 4912	26	57.5	0.0	1.4	12.9	14.1	15.5	17.0	18.2	29.4	30.9	33.2	46 15.46	0.13	4.65	14 46 20.24	14.89
	Lacaille 6157	27	14 9	16.4	18.6	19.3	22.3	. .	33.4	36.1	37.5	38.8	40.4	48 57.71	0.43	4.64	14 49 2.78	14.87
	Lacaille 6164	28	35.6	37.2	38.7	40.2	43.0	. .	54.0	56.6	58.2	59.4	1.2	49 18.41	0.43	4.64	14 49 23.48	14.87
	Lacaille 6190	29	11.5	14.0	15.4	27.1	28.4	29.7	31.3	32.4	43.8	45.4	47.8	53 29.71	0.13	4.64	14 53 34.48	15.07
	Lacaille 6219	30	58.1	0.7	2.1	13.3	14.4	15.7	17.0	18.3	29.3	30.6	33.0	57 15.68	0.12	4.64	14 57 20.44	14.72
	Lacaille 6258	31	57.4	59.9	1.2	12.9	14.0	15.4	16.9	18.0	29.5	30.8	33.3	3 15.39	0.13	4.64	15 3 20.16	15.09
	1 Lupi	32	55.7	58.0	59.5	10.8	12.0	13.3	14.8	16.0	27.0	28.5	30.8	6 13.31	0.12	4.64	15 6 18.07	14.89
	β Libræ	33	21.6	23.8	25.0	34.8	35.8	37.0	38.2	39.2	48.8	50.2	52.0	9 36.95	0.12	4.64	15 9 41.71	13.04
	Lacaille 6342	34	22.8	25.1	26.4	38.0	39.1	40.5	42.0	43.1	54.1	55.7	58.0	13 40.44	0.12	4.64	15 13 45.20	15.02
	B. A. C. 5066	35	31.8	34.1	35.4	46.3	47.5	48.8	50.1	51.2	1.8	3.3	5.5	15 48.71	0.12	4.64	15 15 53.47	14.54
	B. A. C. 5090	36	21.9	24.3	25.6	36.6	37.8	39.1	40.4	41.5	52.4	53.8	56.0	20 39.04	0.12	4.64	15 20 43.80	14.73
	Lacaille 6405	37	22.0	24.5	25.9	37.6	38.7	40.0	41.4	42.7	54.1	55.5	58.0	22 40.04	0.12	4.64	15 22 44.80	15.28
	Lacaille 6439	38	17.3	19.8	21.2	32.5	33.8	35.3	36.7	38.0	49.2	50.7	52.9	27 35.22	0.13	4.64	15 27 39.99	15.23
	ψ¹ Lupi	39	45.5	48.0	49.5	1.0	2.2	3.8	5.0	6.3	17.6	19.3	21.7	31 3.63	0.13	4.64	15 31 8.40	15.41
	ψ² Lupi	40	38.7	41.3	42.6	54.2	55.6	57.0	58.3	59.6	1.1	2.5	5.0	33 56.90	0.13	4.64	15 34 1.67	15.47
	α Serpentis	41	14.6	16.7	17.9	27.5	28.6	29.7	30.9	32.0	41.5	42.7	44.7	37 29.71	0.12	4.64	15 37 34.47	11.99
	Lacaille 6541	42	46.0	48.4	49.9	1.4	2.5	3.9	5.4	6.4	17.6	19.1	21.6	41 3.84	0.13	4.14	15 41 8.61	15.29
	Lacaille 6555	43	35.0	37.5	38.8	50.4	51.6	53.0	54.4	55.7	6.7	8.3	10.6	42 52.91	0.13	4.64	15 42 57.68	15.29
3	ρ Bootis	44	36.4	38.8	40.2	51.5	52.7	54.0	55.5	56.6	7.6	9.1	11.4	25 53.98	0.09	4.44	14 25 58.51	10.80
	μ Virginis	45	34.4	36.3	37.5	47.2	48.3	49.5	50.6	51.7	1.2	2.5	4.4	35 49.42	+ 0.13	4.44	14 35 53.99	12.76
	ε Bootis	46	56.3	57.5	58.8	0.1	1.2	. .	32.5	35.0	36.4	37.8	39.3	39 17.49	− 18.65	4.44	14 39 3.28	10.92
	α Libræ	†47	1.6	3.7	4.8	15.0	16.0	17.2	18.4	19.5	29.3	30.7	32.6	43 17.16	+ 0.15	4.44	14 43 21.75	13.43
	ξ² Libræ	48	3.9	6.0	7.2	17.0	17.9	19.2	20.3	21.4	. .	. .	. .	49 14.11	5.18	4.44	14 49 23.73	13.16
	Moon I	49	27.8	30.0	31.4	41.9	43.0	44.4	45.7	46.8	57.2	58.6	0.6	15 44.31	0.16	4.43	15 15 48.90	. .
	ζ¹ Libræ	50	15.3	17.6	18.7	28.8	29.9	31.0	32.3	33.4	43.2	44.6	46.6	20 31.04	0.15	4.43	15 20 35.62	13.65
	α Cor. Borealis	51	34.8	37.1	38.5	49.3	50.6	51.9	53.2	54.2	5.0	6.4	8.6	28 51.78	0.09	4.43	15 28 56.30	10.62
	κ Libræ	52	46.5	48.7	49.9	0.2	1.2	3.3	3.8	4.8	14.9	16.3	18.4	34 2.47	0.15	4.43	15 34 7.05	13.95
	η Libræ	53	5.6	7.7	8.8	19.0	20.0	21.3	22.3	23.4	33.4	34.6	36.7	36 21.16	0.15	4.43	15 36 25.74	13.62
	θ Libræ	54	45.0	47.0	48.4	58.5	59.6	0.7	2.0	3.0	12.9	14.2	16.3	46 0.69	0.15	4.42	15 46 5.26	13.73
	α Scorpii	55	43.1	45.4	46.7	57.4	58.5	59.8	1.3	2.4	12.9	14.4	16.6	20 59.86	+ 0.17	+ 4.42	16 21 4.45	− 14.75

47. Through clouds.

May 3. n. = − 0.080 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 3, 16.1	+ 4.42	− 0.011	+ 0.120

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	IX.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 3	φ Ophiuchi	1	- -	- -	- -	29.0	30.4	32.6	48.0	50.5	51.8	52.9	54.3	23 43.69	— 26.61	+ 4.42	16 23 21.50	— 13.77
	* — 67 W.	2	38.3	40.4	41.5	51.2	52.3	53.4	54.5	55.6	5.0	6.3	8.3	27 53.35	+ 0.13	4.42	16 27 57.90	12.72
	ζ Ophiuchi	3	20.5	22.7	23.8	33.6	34.6	35.8	37.0	38.1	47.7	49.1	51.0	29 35.81	0.14	4.42	16 29 40.37	13.24
Y.	Weisse 637	4	25.2	27.3	28.4	38.1	39.2	40.4	41.5	42.5	52.0	53.3	55.1	33 40.27	0.12	4.41	16 33 44.80	12.36
	Lacaille 7551	5	7.9	10.5	12.0	23.9	25.4	26.7	28.0	29.5	41.3	42.9	45.4	56 26.59	0.21	4.41	17 56 31.20	15.96
	Lacaille 7580	6	45.8	48.0	49.3	1.4	2.7	4.0	5.7	7.0	18.7	20.4	22.7	0 4.11	0.21	4.40	18 0 8.72	15.95
	Lacaille 7595	7	12.0	14.4	16.0	27.7	29.0	30.5	32.0	33.0	44.6	46.2	48.6	2 30.26	0.21	4.40	18 2 34.97	15.66
	μ Sagittarii	8	16.8	19.0	20.2	30.6	31.8	33.1	34.3	35.4	45.5	47.0	49.0	5 32.97	0.16	4.40	18 5 37.53	14.02
	Lacaille 7646	9	46.2	47.8	49.5	50.9	53.8	- -	6.3	9.0	10.6	11.9	13.7	8 29.97	0.50	4.40	18 8 34.87	15.55
	* — 34° 10′:	†10	17.1	19.7	21.1	32.5	34.0	35.3	36.8	38.0	49.4	51.0	53.4	8 35.30	0.20	4.40	18 8 39.90	15.55
	Lacaille 7661	11	- -	- -	- -	2.0	3.4	4.8	6.2	7.4	- -	- -	- -	11 4.76	0.16	4.40	18 11 9.31	— 15.72
	δ Ursæ Minoris	12	- -	- -	- -	53.5	10.0	30.5	51.5	8.0	- -	- -	- -	16 30.70	0.11	4.40	18 16 34.99	+ 55.40
	1 Aquilæ	†13	28.3	30.4	31.6	41.3	42.4	43.6	44.8	45.8	55.4	56.7	58.3	27 43.51	0.13	4.39	18 27 48.03	— 12.69
	51 (Hev.) Cephei, S. P.	14	- -	- -	- -	52.0	31.5	6.5	42.0	22.0	- -	- -	- -	35 6.80	0.14	4.39	6 35 11.33	93.62
4	Moon II	15	47.3	49.5	50.9	1.7	2.8	4.1	5.4	6.5	17.0	18.5	20.7	20 4.04	+ 0.16	3.93	16 20 8.13	. .
N.	α Scorpii	16	- -	- -	- -	- -	59.1	0.4	1.7	3.0	13.4	15.0	17.1	21 7.10	— 6.51	3.93	16 21 4.52	14.77
	τ Scorpii	17	- -	- -	- -	- -	- -	- -	55.0	57.6	59.0	0.3	1.9	27 58.76	37.35	3.93	16 27 25.35	14.98
	ζ Ophiuchi	18	- -	- -	- -	34.1	35.3	36.4	37.7	38.6	48.2	49.5	51.5	29 41.41	— 4.93	3.93	16 29 40.41	13.26
	ζ Herculis	19	48.5	50.8	52.3	3.6	4.8	6.3	7.5	8.8	20.0	21.4	23.8	36 6.16	+ 0.10	3.93	16 36 10.19	9.62
	α Cameleopardi, S. P.	20	1.8	56.8	53.7	29.9	27.4	24.6	21.5	19.0	55.7	52.4	47.5	40 24.57	— 0.13	3.93	4 40 28.37	18.71
	κ Ophiuchi	21	54.8	56.7	58.0	7.8	8.9	10.0	11.2	12.3	21.8	23.2	25.3	51 10.00	+ 0.12	3.93	16 51 14.05	11.50
	Lacaille 7128	22	0.7	3.2	4.5	15.6	16.7	18.2	19.4	20.6	31.3	32.9	35.0	57 18.01	+ 0.19	3.93	16 57 22.13	15.09
	ε Ursæ Minoris	23	- -	- -	- -	50.9	58.6	7.7	16.7	24.3	- -	- -	- -	0 7.64	— 0.02	3.93	17 0 11.55	+ 15.21
8	α Andromedæ	24	49.7	52.1	53.4	14.4	15.5	16.8	18.3	19.3	30.2	31.6	33.7	1 16.82	+ 0.18	2.89	0 1 19.89	— 10.43
Y.	Polaris	25	- -	- -	- -	59.0	40.5	29.0	16.0	57.5	- -	- -	- -	8 28.40	5.27	2.89	1 8 36.56	34.05
9	Sun I	†26	52.4	54.3	55.6	6.1	7.1	8.3	9.4	10.6	20.2	21.7	23.7	3 8.13	0.16	2.89	3 3 11.18	. .
	Sun II	27	5.7	7.9	9.0	19.3	20.5	21.5	22.7	23.9	33.7	35.1	37.2	5 21.50	0.16	2.89	3 5 24.55	. .
	Mercury I	†28	44.9	47.3	48.5	59.0	0.1	1.6	2.7	3.9	14.1	15.6	17.7	22 1.40	0.17	2.89	4 22 4.46	+ 0.23
	α Tauri	†29	45.7	48.3	49.5	- -	- -	- -	- -	- -	13.9	15.1	17.2	28 1.62	0.19	2.89	4 28 4.70	— 11.25
	α Aurigæ	30	11.1	14.0	15.7	29.6	31.0	32.6	34.4	35.9	49.4	51.3	54.2	6 32.65	+ 0.24	2.89	5 6 35.78	14.49
	β Orionis	†31	- -	- -	- -	- -	- -	- -	25.2	27.6	28.9	29.9	31.6	8 28.64	— 33.38	2.89	5 7 58.15	— 9.30
	Venus I	32	46.9	49.1	50.5	1.1	2.3	3.6	4.9	6.1	16.3	17.6	20.0	33 3.49	+ 0.17	2.89	5 33 6.55	+ 0.51
	α Orionis	34	28.2	30.2	31.4	41.1	42.3	43.4	44.6	45.6	55.1	56.5	58.5	47 43.35	0.14	2.89	5 47 46.38	— 10.78
	α Canis Majoris	33	48.8	50.9	52.1	2.0	3.2	4.5	5.6	6.8	16.7	18.0	19.9	39 4.41	0.13	2.89	6 39 7.43	8.75
	α Can. Venat.	†35	17.4	20.0	21.4	33.9	35.4	37.0	38.3	39.6	51.8	53.6	56.1	49 36.77	0.21	2.89	12 49 39.87	11.42
	78 Ursæ Majoris	36	22.8	26.7	28.9	46.6	48.6	50.8	53.0	54.8	12.2	14.5	18.2	54 50.65	0.32	2.89	12 54 53.86	11.00
	θ Virginis	37	36.5	38.7	39.8	49.5	50.6	51.7	52.8	53.8	3.4	4.7	6.6	2 51.65	0.13	2.89	13 2 54.67	12.41
	53 Virginis	38	30.9	33.1	34.3	44.4	45.4	46.7	47.9	48.9	58.7	0.0	2.0	4 46.57	+ 0.13	2.89	13 4 49.59	12.77
	Polaris, S. P.	39	- -	- -	- -	2.5	21.0	34.5	45.0	7.5	- -	- -	- -	8 34.10	— 0.61	2.89	1 8 36.38	34.27
	Jupiter I	40	46.5	47.7	49.0	50.2	52.8	- -	53.0	55.3	56.6	57.8	59.1	13 22.80	+ 0.40	2.89	13 13 26.09	. .
	Jupiter II	41	10.8	12.9	14.2	23.8	25.0	26.2	27.2	28.3	37.8	39.0	40.9	13 26.01	0.15	2.89	13 13 29.05	. .
	α Virginis	42	43.8	45.9	46.9	56.8	57.9	59.0	0.2	1.2	11.0	12.3	14.2	17 59.02	0.16	2.89	13 18 2.07	12.70
	l^2 Virginis	43	35.8	37.8	39.0	48.7	49.8	50.9	52.0	53.0	2.7	4.0	6.0	24 50.88	0.15	2.89	13 24 53.92	12.55
	* + 77° 0′	44	0.7	10.2	14.8	58.0	2.6	7.8	13.0	17.5	59.8	5.4	14.0	32 7.62	+ 0.27	2.89	13 32 10.78	7.16
	* + 77° 17′	45	- -	- -	- -	- -	- -	- -	12.8	22.9	28.3	33.3	39.8	35 27.42	— 2 30.37	2.89	13 32 59.94	6.99
	B. Z. 414, 20	46	57.2	59.6	1.1	12.8	14.1	15.6	17.1	18.3	29.7	31.3	33.7	43 15.50	+ 0.12	2.89	13 43 18.51	11.06
	Weisse 785	47	24.1	26.2	27.3	37.1	38.2	39.3	40.5	41.6	51.3	52.4	54.4	46 39.31	0.13	2.89	13 46 42.33	12.02
	B. Z. 462, 66	48	20.1	22.4	23.6	34.5	35.6	36.8	38.2	39.3	49.8	51.2	53.2	49 36.79	0.13	2.89	13 49 39.81	11.39
	* + 77° 4′	49	21.3	31.1	36.6	19.6	24.4	29.6	35.0	39.4	22.4	27.9	36.5	54 29.44	0.27	2.89	13 54 32.60	5.55
	Weisse 1035	50	2.4	4.5	5.6	15.7	16.8	18.0	19.3	20.2	30.0	31.3	33.4	59 17.93	0.16	2.89	13 59 20.98	13.11
	Lacaille 5839	51	34.5	37.0	38.4	49.7	50.9	52.3	53.5	54.8	5.8	7.3	9.7	2 52.17	+ 0.22	2.89	14 2 55.28	14.31
	Lacaille 5872	†52	- -	- -	- -	10.5	11.7	13.1	14.4	15.7	27.0	28.4	30.7	8 18.94	— 5.70	2.89	14 8 16.13	14.47
	Lacaille 5883	53	1.0	3.3	4.8	16.0	17.4	18.8	20.3	21.5	32.6	34.2	36.5	10 18.76	+ 0.22	2.89	14 10 21.87	14.50
	O. Arg. S. 13694	54	40.6	42.9	44.2	54.7	55.8	57.0	58.4	59.6	9.8	11.2	13.4	23 56.96	+ 0.19	+ 2.89	14 24 0.04	— 13.96

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 4, 16.6	+ 3.93	— 0.012	+ 0.125
9, 12.4	+ 2.89	0.000	+ 0.140
10, 6.5	+ 2.55	+ 0.002	+ 0.146

10. Declination uncertain.
13. Cloudy.
26. Poor observation.
28. Faint.
29. Faint.
31. Discordant; not used for clock error.
35. Cloudy.
52. Faint.

s.
May 4. n. = — 0.080.
8–9. = + 0.040.
9, 12h. to 22h. — 0.080.
10. — 0.005.

'E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
9	ρ Bootis	1	37.9	40.3	41.8	53.2	54.4	55.7	57.0	58.2	9.3	10.8	13.0	25 55.60	+ 0.12	+ 2.89	14 25 58.61	— 10.82
	3 Libræ	2	11.8	14.2	15.4	26.1	27.3	28.4	29.9	31.0	41.4	42.6	44.9	31 28.45	0.19	2.89	14 31 31.53	14.07
	Lacaille 6060	3	8.0	10.3	11.8	22.6	23.7	25.1	26.4	27.5	38.2	39.5	41.7	34 24.98	0.20	2.89	14 34 28.07	14.32
	B. A. C. 4857	4	9.2	11.3	12.6	23.3	24.3	25.5	26.8	27.9	38.4	39.6	41.8	36 25.52	0.19	2.89	14 36 28.60	14.04
	ε Bootis	5	43.2	45.6	47.0	57.9	59.0	0.3	1.6	2.8	13.5	15.0	17.2	39 0.28	0.12	2.89	14 39 3.29	10.94
	ν Aquarii	6	51.5	53.6	54.8	4.6	5.7	6.9	8.1	9.2	18.8	20.1	22.1	2 6.85	+ 0.16	2.89	21 2 9.90	12.05
	ζ Cygni	7	- -	- -	- -	2.7	3.8	5.1	6.5	7.7	18.8	20.2	22.4	7 10.90	— 5.62	2.89	21 7 8.17	9.54
	β Aquarii	8	- -	- -	- -	17.4	18.5	19.8	20.9	21.9	- -	- -	- -	24 19.70	+ 0.10	2.89	21 24 22.69	11.56
	ε Pegasi	9	11.1	13.1	14.3	24.1	25.1	26.4	27.6	28.6	38.1	39.4	41.5	37 26.30	0.13	2.89	21 37 29.32	10.73
10	β Cephei	10	- -	-	- -	44.9	47.9	51.2	54.6	57.7	- -	- -	- -	26 51.26	0.27	2.53	21 26 54.06	3.49
	ε Pegasi	11	11.3	13.4	14.7	24.5	25.5	26.7	27.9	28.9	38.5	39.7	41.8	37 26.63	0.15	2.53	21 37 29.31	10.76
	α Aquarii	12	29.0	30.9	32.2	41.8	42.9	44.0	45.3	46.2	55.7	56.9	58.8	58 43.97	+ 0.15	2.53	21 58 46.65	11.12
	π Aquarii	13	- -	- -	- -	27.6	28.9	30.8	45.8	48.1	49.2	50.3	51.6	18 41.54	— 25.53	2.53	22 18 18.54	10.93
	ζ Aquarii	14	- -	- -	- -	43.4	44.5	45.7	46.9	47.9	- -	- -	- -	21 45.68	+ 0.10	2.53	22 21 48.31	10.96
	ζ Aquarii	15	30.7	32.7	33.9	- -	- -	- -	-	- -	57.4	58.7	0.6	21 45.67	0.19	2.53	22 21 48.39	10.96
	Moon II	16	39.9	41.9	43.1	53.0	54.2	55.4	56.6	57.7	7.3	8.6	10.6	23 55.30	0.15	2.53	22 23 57.98	- -
	η Aquarii	17	3.0	5.0	6.2	15.9	16.9	18.0	19.2	20.3	29.7	31.0	33.0	28 18.02	0.15	2.53	22 28 20.70	10.94
	Polaris	†18	- -	- -	- -	2.0	42.5	- -	19.0	- -	- -	- -	- -	8 1.17	33.38	2.54	1 8 37.09	34.93
11	Sun I	19	40.6	42.7	43.7	54.3	55.3	56.5	57.9	58.8	8.9	10.2	12.3	10 56.47	0.17	2.54	3 10 59.18	- -
	Sun II	20	54.3	56.4	57.5	7.7	8.8	10.1	11.4	12.4	22.3	23.7	25.8	13 10.04	0.17	2.54	3 13 12.75	- -
	α Tauri	21	46.4	48.6	49.7	59.9	1.0	2.0	3.4	4.4	14.3	15.6	17.5	28 2.07	0.17	2.55	4 28 4.79	— 11.25
	Mercury I	22	56.3	58.7	59.7	- -	- -	- -	- -	- -	25.6	27.0	29.3	35 12.77	0.22	2.55	4 35 15.54	+ 0.24
	α Orionis	23	28.5	30.7	31.7	41.6	42.6	43.7	45.0	46.0	55.5	56.8	88.9	47 43.73	0.15	2.55	5 47 46.43	— 10.77
	γ Leonis	24	8.4	10.6	11.8	22.1	23.2	24.6	25.8	26.9	37.0	38.4	40.5	12 24.48	0.16	2.56	10 12 27.20	12.29
	Lacaille 4539	25	31.1	33.4	34.6	45.5	46.6	48.0	49.3	50.5	1.0	2.4	4.6	52 47.91	0.18	2.56	10 52 50.65	11.15
	χ Leonis	26	41.5	43.5	44.7	54.4	55.5	56.7	57.9	58.9	8.4	9.8	11.8	57 56.65	0.15	2.56	10 57 59.36	11.79
	Lacaille 4609	27	21.9	24.4	25.6	36.9	38.0	39.3	40.7	41.8	52.6	54.2	56.4	1 39.25	+ 0.18	2.56	11 1 41.99	11.24
	Lacaille 4614	28	- -	- -	- -	16.5	18.0	20.1	37.2	38.9	41.2	42.4	44.3	2 32.33	— 29.17	2.56	11 2 5.72	11.25
	Lacaille 4646	29	14.3	16.4	17.8	28.6	29.7	31.0	32.4	33.5	44.0	45.5	47.5	6 30.97	+ 0.17	2.56	11 6 33.70	11.38
	Lacaille 4655	†30	38.0	40.3	41.4	52.4	53.5	54.8	56.0	57.2	7.7	9.1	11.3	7 54.70	0.17	2.56	11 7 57.43	11.41
	δ Crateris	31	14.0	16.0	17.3	27.2	28.3	29.5	30.7	31.7	41.5	42.8	44.9	12 29.45	0.16	2.56	11 12 32.17	11.58
	Lacaille 4725	32	4.5	6.7	8.1	19.2	20.4	21.7	23.1	24.3	34.9	36.3	38.5	16 21.61	0.17	2.56	11 16 24.34	11.52
	Lacaille 4749	33	34.2	36.4	37.7	48.5	49.6	50.9	52.1	53.3	3.7	5.1	7.2	20 50.79	0.17	2.56	11 20 53.52	11.61
	Lacaille 4761	34	15.9	18.1	19.4	30.0	31.2	32.6	33.9	35.0	45.4	46.8	49.1	23 32.49	0.17	2.56	11 23 35.22	11.66
	B. A. C. 3921	†35	- -	- -	- -	26.5	27.6	28.9	30.4	31.4	- -	- -	- -	25 28.96	0.12	2.56	11 25 31.64	11.67
	B. A. C. 3922	†36	12.2	14.6	15.9	- -	- -	- -	- -	- -	42.7	44.1	46.4	25 29.32	0.21	2.56	11 25 32.09	11.67
	υ Leonis	37	41.0	43.0	44.2	53.8	54.9	56.1	57.2	58.3	7.7	9.0	11.0	29 56.02	0.15	2.56	11 29 58.73	11.88
	Lacaille 4833	38	39.2	41.8	43.2	54.9	56.3	57.5	59.0	0.3	11.8	13.5	15.6	32 57.55	0.19	2.56	11 32 0.30	11.80
	B. A. C. 3969	39	36.3	38.7	40.0	51.5	52.7	54.1	55.4	56.6	7.8	9.3	11.5	34 53.99	0.18	2.56	11 34 56.73	11.84
	Lacaille 4867	40	50.1	52.4	53.7	4.9	6.0	7.4	8.7	9.9	20.7	22.1	24.4	37 7.30	+ 0.17	2.56	11 37 10.03	11.87
	B. A. C. 4003	41	- -	-	- -	40.0	41.1	42.3	43.7	44.9	55.4	56.9	59.1	43 47.92	— 5.40	2.56	11 43 45.08	11.96
	Lacaille 4909	42	- -	- -	- -	7.5	8.5	9.9	11.3	12.4	- -	- -	- -	44 9.92	+ 0.12	2.56	11 44 12.60	11.98
	Lacaille 4939	43	16.6	18.9	20.2	30.8	32.0	33.2	34.6	35.6	45.9	47.4	49.4	48 33.15	0.17	2.56	11 48 35.88	12.04
	B. A. C. 4042	44	39.0	41.2	42.5	53.2	54.3	55.6	56.9	58.2	8.6	10.0	12.1	51 55.60	0.17	2.56	11 51 58.33	12.09
	Lacaille 4979	45	30.3	32.8	34.2	45.8	47.1	48.5	49.9	51.0	2.5	4.0	6.4	54 48.41	0.19	2.56	11 54 51.16	12.24
	Saturn I	46	58.0	59.4	0.7	1.9	4.3	- -	4.5	6.7	7.9	9.1	10.4	0 34.29	0.40	2.56	12 0 37.25	- -
	Saturn II	47	20.7	22.8	23.9	33.5	34.7	35.8	37.1	38.1	47.5	48.7	50.7	0 35.77	0.15	2.56	12 0 38.48	- -
	4 Draconis	48	- -	- -	- -	34.8	40.0	46.1	52.1	56.6	- -	- -	- -	5 45.92	0.45	2.56	12 5 48.93	13.52
	η Virginis	49	39.0	41.0	42.2	51.8	52.9	54.0	55.2	56.2	5.6	6.9	8.9	12 53.97	0.15	2.56	12 12 56.68	12.07
	Lacaille 5144	50	52.0	54.2	55.4	6.3	7.5	8.8	10.1	11.4	22.0	23.4	25.6	18 8.79	0.17	2.56	12 18 11.52	12.53
	* — 30° 14′ (?)	51	- -	- -	- -	26.7	27.8	29.3	30.6	31.7	- -	- -	- -	23 29.22	0.18	2.56	12 23 31.96	12.71
	O. Arg. S. 12219	52	6.5	8.8	10.3	21.4	22.6	23.9	25.4	26.5	37.5	38.9	41.1	24 23.90	+ 0.18	2.56	12 24 26.64	12.71
	β Corvi	53	- -	- -	- -	24.9	26.3	28.3	44.4	47.0	48.3	49.5	51.0	27 39.96	— 27.65	2.56	12 27 14.87	12.55
	B. A. C. 4253	54	10.5	12.8	14.8	24.8	25.9	27.3	28.6	29.8	40.3	41.7	43.9	30 27.31	+ 0.17	+ 2.56	12 30 30.04	— 12.70

18. Invisible at the other wires; last wire not so good as the other.
30. Lacaille has 49s.
35–36. Angle 298°; distance 15″

May 11, 3h. to 6h. n. = + $\overset{s.}{0.050}$.
10h. to 14h. — 0.010.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 10, 6.5	+ 2.55	+ 0.002	+ 0.149
11, 3.2	+ 2.78	+ 0.002	+ 0.150

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 11	Lacaille 5239	1	19. 0	21. 4	22. 7	33. 4	34. 6	35. 9	37. 3	38. 5	49. 0	50. 4	52. 7	33 35. 90	+ 0. 17	+ 2. 56	12 33 38. 63	— 12. 76
	21 Cassiopeæ, S. P.	2	- -	- -	- -	45. 3	41. 5	37. 4	33. 2	29. 1	- -	- -	- -	36 37. 30	— 0. 34	2. 56	0 36 39. 52	11. 30
	Lacaille 5282	3	57. 0	58. 3	59. 9	1. 3	3. 8	- -	9. 8	12. 3	13. 6	14. 9	16. 3	40 36. 72	+ 0. 44	2. 56	12 40 39. 72	12. 78
N.	Lacaille 5283	4	21. 0	23. 4	24. 5	35. 2	36. 3	37. 6	38. 9	40. 0	50. 4	51. 8	53. 9	40 37. 55	0. 17	2. 56	12 40 40. 28	12. 77
	Lacaille 5315	5	37. 4	39. 7	40. 9	52. 0	53. 2	54. 5	55. 9	57. 2	7. 9	9. 4	11. 7	45 54. 53	0. 18	2. 56	12 45 57. 27	13. 03
	Lacaille 5326	6	51. 2	53. 7	55. 0	6. 0	7. 3	8. 5	10. 0	11. 2	22. 0	23. 4	25. 6	48 8. 54	0. 18	2. 56	12 48 11. 28	13. 07
	Lacaille 5346	7	- -	- -	- -	15. 4	16. 8	18. 2	19. 7	20. 8	- -	- -	- -	51 18. 18	+ 0. 14	2. 56	12 51 20. 88	13. 55
	Polaris, S. P.	8	45. 0	22. 0	35. 0	9. 0	27. 5	- -	50. 0	9. 0	48. 0	55. 5	38. 0	8 39. 90	— 5. 77	2. 56	1 8 36. 69	35. 17
	ζ Virginis	9	28. 3	30. 3	31. 5	41. 0	42. 0	43. 3	44. 5	45. 5	54. 9	56. 2	58. 3	27 43. 25	+ 0. 15	2. 56	13 27 45. 96	12. 29
	Moon II	10	39. 6	41. 7	42. 9	52. 8	53. 8	55. 0	56. 3	57. 3	6. 9	8. 2	10. 3	15 54. 98	0. 15	2. 77	23 15 57. 90	- -
Y.	α Andromedæ	11	59. 8	2. 3	3. 5	14. 5	15. 7	17. 0	18. 4	19. 7	30. 2	31. 7	33. 9	1 16. 97	0. 16	2. 77	0 1 19. 90	10. 52
	Polaris	†12	- -	- -	- -	59. 0	- -	31. 0	- -	1. 0	- -	- -	- -	8 30. 33	4. 02	2. 77	1 8 37. 12	35. 41
12	Sun I	†13	35. 1	37. 3	38. 6	48. 6	49. 7	51. 0	52. 2	53. 3	3. 4	4. 6	6. 7	14 50. 95	0. 16	2. 78	3 14 53. 89	- -
	Sun II	14	48. 8	51. 0	52. 1	2. 4	3. 5	4. 7	5. 9	7. 0	17. 0	18. 3	20. 3	17 4. 64	+ 0. 16	2. 78	3 17 7. 58	- -
	α Tauri	15	- -	- -	- -	- -	- -	- -	32. 7	35. 1	36. 5	37. 6	39. 1	28 36. 20	— 34. 37	2. 78	4 28 4. 61	— 11. 25
	Mercury I	16	10. 5	12. 7	13. 9	24. 7	25. 8	27. 2	28. 5	29. 6	40. 0	41. 4	43. 4	41 27. 05	+ 0. 17	2. 78	4 41 30. 00	+ 0. 25
	β Orionis	17	40. 0	42. 0	43. 2	52. 8	54. 0	55. 2	56. 4	57. 4	7. 0	8. 2	10. 2	7 55. 13	0. 15	2. 78	5 7 58. 06	— 9. 30
	Venus I	18	24. 0	26. 2	27. 5	38. 3	39. 5	40. 7	42. 0	43. 2	53. 8	55. 1	57. 3	48 40. 69	0. 17	2. 78	5 48 43. 64	+ 0. 52
N.	α Andromedæ	19	0. 0	2. 4	3. 7	14. 6	15. 7	17. 0	18. 6	19. 8	30. 3	31. 9	34. 0	1 17. 09	0. 12	2. 77	0 1 19. 98	— 10. 55
	Moon II	20	49. 3	51. 6	52. 6	2. 6	3. 6	4. 9	6. 0	7. 1	- -	- -	- -	6 59. 71	5. 22	2. 77	0 7 7. 70	- -
	Polaris	21	28. 5	47. 0	36. 0	- -	- -	- -	- -	- -	- -	- -	- -	59 37. 17	8 58. 23	2. 77	1 8 38. 17	35. 95
14	i Centauri	22	37. 5	39. 9	41. 2	52. 7	53. 8	55. 2	56. 5	57. 9	9. 0	10. 5	12. 9	37 55. 19	0. 31	2. 90	13 37 58. 40	14. 02
Y.	g Centauri	23	13. 5	16. 0	17. 4	29. 1	30. 3	31. 7	33. 1	34. 3	45. 9	47. 1	49. 6	41 31. 64	0. 32	2. 89	13 41 34. 85	14. 18
	B. A. C. 4631	24	15. 2	17. 8	19. 1	30. 8	32. 3	33. 6	35. 0	36. 3	47. 8	49. 3	51. 7	45 33. 54	0. 33	2. 89	13 45 36. 76	14. 34
	Lacaille 5758	25	15. 9	18. 5	20. 1	32. 3	33. 7	35. 2	36. 6	37. 9	49. 9	51. 6	54. 0	48 35. 06	0. 35	2. 89	13 48 38. 30	14. 61
	Lacaille 5779	†26	22. 6	25. 4	26. 7	39. 9	41. 8	43. 4	44. 9	46. 2	59. 2	1. 0	3. 7	52 43. 16	+ 0. 41	2. 89	13 52 46. 46	15. 27
	τ Virginis	27	- -	- -	- -	38. 5	39. 6	40. 7	41. 9	43. 0	52. 4	53. 7	55. 6	54 45. 68	— 4. 84	2. 88	13 54 43. 72	12. 36
	Lacaille 5822	28	- -	- -	- -	59. 2	0. 7	2. 0	3. 4	4. 5	16. 1	17. 7	20. 3	59 7. 99	— 5. 74	2. 88	13 59 4. 13	14 54
	Lacaille 5837	29	59. 8	2. 1	3. 3	14. 5	15. 9	17. 2	18. 7	19. 7	30. 5	32. 1	34. 4	2 17. 11	+ 0. 29	2. 88	14 2 20. 28	14. 20
	Lacaille 5860	30	56. 7	59. 4	1. 0	13. 8	15. 1	16. 8	18. 6	19. 7	32. 3	33. 9	36. 7	6 16. 73	0. 38	2. 87	14 6 19. 98	15. 29
	Lacaille 5878	31	1. 5	4. 4	5. 7	18. 9	20. 1	21. 6	23. 3	24. 8	37. 4	39. 1	41. 7	9 21. 68	0. 39	2. 87	14 9 24. 94	15. 43
	Lacaille 5898	32	9. 0	11. 6	12. 9	24. 5	25. 9	27. 3	28. 6	29. 9	41. 2	42. 8	45. 1	12 27. 16	0. 33	2. 87	14 12 30. 36	14. 68
	B. A. C. 4757	33	50. 2	52. 7	53. 9	5. 8	7. 0	8. 5	10. 0	11. 1	22. 5	24. 2	26. 5	14 8. 40	0. 33	2. 87	14 14 11. 60	14. 72
	Lacaille 5932	34	5. 0	7. 6	9. 0	20. 2	21. 6	22. 9	24. 4	25. 5	36. 8	38. 3	40. 6	17 22. 90	0. 31	2. 86	14 17 26. 07	14. 59
	Lacaille 5953	35	52. 7	55. 1	56. 3	7. 4	8. 5	9. 9	11. 3	12. 3	23. 2	24. 7	26. 8	21 9. 84	0. 29	2. 86	14 21 12. 99	14. 31
	Lacaille 5975	36	34. 0	36. 4	37. 9	49. 3	50. 5	51. 8	53. 2	54. 4	5. 5	7. 0	9. 3	23 51. 75	0. 31	2. 86	14 23 54. 92	14. 61
	Lacaille 5988	37	39. 0	41. 4	42. 6	54. 2	55. 3	56. 8	58. 1	59. 3	10. 5	11. 9	14. 0	25 56. 65	0. 31	2. 86	14 25 59. 82	14. 62
	Lacaille 6020	38	47. 0	49. 5	51. 1	2. 8	4. 2	5. 5	7. 0	8. 3	19. 6	21. 2	23. 6	30 5. 44	0. 33	2. 85	14 30 8. 62	14. 99
	B. A. C. 4852	39	59. 9	2. 4	3. 9	15. 6	16. 8	18. 2	19. 7	20. 9	32. 4	33. 8	36. 2	35 18. 20	0. 33	2. 85	14 35 21. 38	15. 04
	B. A. C. 4858	40	18. 1	20. 7	22. 1	34. 0	35. 3	36. 5	38. 0	39. 3	50. 8	52. 2	54. 7	36 36. 52	0. 33	2. 85	14 36 39. 70	15. 06
	Lacaille 6099	41	24. 6	27. 0	28. 0	38. 8	40. 2	41. 4	42. 8	43. 9	54. 6	56. 0	58. 2	39 41. 41	0. 28	2. 85	14 39 44. 54	14. 40
	α Libræ	42	3. 2	5. 4	6. 6	16. 6	17. 6	18. 8	20. 0	21. 0	30. 8	32. 2	34. 2	43 18. 76	0. 22	2. 84	14 43 21. 82	13. 51
	Lacaille 6135	43	44. 3	46. 8	48. 2	59. 8	0. 9	2. 5	3. 9	5. 1	16. 5	17. 9	20. 4	46 2. 39	0. 32	2. 84	14 46 5. 55	15. 08
	Lacaille 6157	44	42. 1	44. 5	45. 8	57. 2	58. 5	59. 9	1. 3	2. 5	13. 7	15. 2	17. 5	48 59. 84	+ 0. 31	2. 84	14 49 2. 99	14. 98
	Lacaille 6164	45	- -	- -	- -	- -	- -	- -	55. 7	58. 6	0. 1	1. 3	3. 2	49 59. 78	— 38. 92	2. 84	14 49 23. 70	14. 98
	Lacaille 6198	46	19. 8	22. 3	23. 8	35. 2	36. 4	37. 7	39. 1	40. 4	51. 6	53. 0	55. 4	54 37. 70	+ 0. 31	2. 84	14 54 40. 85	15. 02
	Lacaille 6229	47	31. 9	34. 3	35. 5	47. 0	48. 3	49. 6	51. 0	52. 3	3. 5	5. 0	7. 3	58 49. 61	+ 0. 31	2. 83	14 58 52. 75	15. 09
	B. A. C. 4979	48	- -	- -	- -	- -	- -	- -	25. 4	27. 9	29. 3	30. 6	32. 0	1 29. 04	— 36. 63	2. 83	15 0 55. 24	14. 49
	Lacaille 6318	49	- -	- -	- -	52. 3	53. 8	56. 3	14. 1	17. 2	18. 5	20. 0	21. 5	12 9. 21	— 30. 80	2. 82	15 11 41. 23	15. 45
	Lacaille 6354	50	39. 7	42. 3	43. 8	55. 5	56. 7	58. 1	59. 5	1. 8	12. 3	13. 6	16. 3	14 58. 15	+ 0. 33	2. 82	15 15 1. 30	15. 47
	B. A. C. 5090	51	23. 8	26. 2	27. 4	38. 5	39. 6	41. 0	42. 3	43. 4	54. 2	55. 6	57. 8	20 40. 89	0. 29	2. 82	15 20 44. 00	14. 88
	Lacaille 6409	52	0. 2	2. 6	4. 0	15. 5	16. 8	18. 2	19. 6	20. 7	21. 9	23. 3	25. 8	23 18. 05	0. 31	2. 81	15 23 21. 17	15. 33
	Lacaille 6421	53	18. 4	20. 6	22. 1	33. 8	34. 9	36. 3	37. 7	38. 9	50. 2	51. 8	54. 0	25 36. 25	0. 31	2. 81	15 25 39. 44	15. 39
	B. A. C. 5142	54	37. 6	39. 9	41. 2	51. 9	53. 2	54. 3	55. 7	56. 8	7. 5	8. 9	11. 0	28 54. 36	+ 0. 27	2. 81	15 28 57. 44	— 14. 70

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 14, 16. 6	+ 2. 76	— 0. 045	+ 0. 160

12. Faint.
13. Fine observation of sun.
26. Faint.

May 12, 3h. to 6h. n. = + 0. 005 s.
14, — 0. 190.

'E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
14	B. A. C. 5163 . .	1	2.4	4.7	5.9	16.8	18.0	19.2	20.5	21.7	32.4	33.7	36.0	31 19.21	+ 0.28	+ 2.81	15 31 22.30	− 14.82
	Lacaille 6491 . .	2	49.4	51.8	53.3	4.5	5.7	7.1	8.5	9.6	20.7	22.2	24.6	34 7.04	0.30	2.81	15 34 10.15	15.34
	α Serpentis . .	3	16.5	18.6	19.8	29.5	30.5	31.6	32.7	33.9	43.3	44.6	46.7	37 31.61	0.14	2.80	15 37 34.55	12.13
	B. A. C. 5221 . .	4	9.5	12.1	13.3	24.4	25.6	26.9	28.4	29.5	40.3	41.7	44.2	40 26.90	0.29	2.80	15 40 29.99	15.09
	B. A. C. 5240 . .	5	29.2	31.7	33.0	44.1	45.4	46.7	48.2	49.3	0.1	1.5	3.8	43 46.64	0.29	2.80	15 43 49.73	15.15
	B. A. C. 5258 . .	6	53.8	56.2	57.6	8.6	9.7	10.9	12.3	13.3	24.0	25.3	27.7	46 10.85	0.28	2.80	15 46 13.93	14.89
	B. A. C. 5275 . .	7	36.1	38.3	39.5	50.5	51.7	53.0	54.3	55.5	6.2	7.6	9.7	48 52.95	9.28	2.80	15 48 56.03	14.94
	B. A. C. 5294 . .	8	51.4	53.7	54.9	5.9	7.0	8.3	9.6	10.7	21.5	22.9	25.0	51 8.26	0.28	2.79	15 51 11.33	14.88
	B. A. C. 5308 . .	9	54.4	56.8	57.9	9.1	10.3	11.6	12.9	14.1	24.9	26.5	28.7	54 11.56	0.29	2.79	15 54 14.64	15.13
	β^{1} Scorpii	10	13.3	15.5	16.7	26.8	28.1	29.2	30.5	31.7	41.6	42.9	45.2	57 29.23	0.24	2 79	15 57 32.26	14.20
	β^{2} Scorpii	11	51.0	52.3	53.7	55.0	57.6	. .	1.4	3.8	5.1	6.3	7.7	57 29.39	0.51	2.79	15 57 32.69	14.20
	B. A. C. 5354 . .	12	17.4	19.6	21.0	31.5	32.6	34.0	35.2	36.2	46.5	48.0	50.3	0 33.85	0.26	2.79	16 0 36.90	14.58
	B. A. C. 5378 . .	13	30.6	32.0	33.5	34.8	37.6	. .	44.9	47.4	48.9	50.0	51.6	3 11.13	0.50	2.78	16 3 14.47	14.96
	* — 26° 44′ . . .	14	57.3	59.7	0.8	11.8	12.9	14.2	15.5	16.5	27.3	28.7	30.9	3 14.15	0.28	2.78	16 3 17.21	14.95
	B. A. C. 5403 . .	15	19.7	22.1	23.4	34.0	35.1	36.4	37.8	38.9	49.3	50.9	52.8	6 36.40	0.27	2.78	166 39.45	14.79
	B. A. C. 5429 . .	16	32.2	34.6	35.9	46.8	48.0	49.4	50.8	51.8	2.6	4.1	6.3	9 49.32	0.29	2.78	16 9 52.39	15.15
	19 Scorpii	17	8.2	10.4	11.8	22.3	23.5	24.7	26.1	27.2	37.5	38.8	41.0	12 24.68	0.26	2.78	16 12 27.74	14.68
	B. A. C. 5465 . .	18	49.0	51.3	52.8	3.5	4.7	6.1	7.3	8.4	19.0	20.3	22.6	16 5.91	0.27	2.77	16 16 8.95	15.01
	α Scorpii	19	44.9	47.2	48.5	59.2	0.4	1.6	3.0	4.3	14.8	16.1	18.4	21 1.67	0.27	2.77	16 21 4.71	14.94
	Lacaille 6871 . .	20	51.2	53.7	55.0	6.5	7.9	9.3	10.8	11.9	23.3	24.8	27.0	24 9.22	0.32	2.77	16 24 12.31	15.82
	Lacaille 6891 . .	21	2.9	5.4	6.7	18.5	19.8	21.2	22.5	23.7	35.0	36.6	38.9	27 21.02	0.32	2.77	16 27 24.11	15.92
	B. A. C. 6083 . .	22	14.7	17.3	18.7	30.5	32.0	33.4	34.9	36.3	48.0	49.4	51.8	52 33.36	0.34	2.70	17 52 36.40	16.27
	γ^{2} Sagittarii . . .	23	43.7	46.2	47.6	58.7	0.0	1.4	2.7	3.9	14.8	16.4	18.5	57 1.26	0.30	2.70	17 57 4.26	15.41
	Lacaille 7580 . .	24	47.3	49.9	51.5	3.4	4.7	6.3	7.7	9.0	20.6	22.1	24.9	0 6.13	+ 0.34	2.70	18 0 9.17	16.29
	* — 34° 38′ . . .	25	57.0	58.0	59.5	0.8	2.2	. .	35.7	38.5	39.9	41.3	42.9	5 19.58	− 19.84	2.69	18 5 2.43	15.96
	Lacaille 7629 . .	26	2.6	5.0	6.6	18.4	19.6	21.0	22.4	23.8	35.0	36.6	39.2	6 20.93	+ 0.33	2.69	18 6 23.95	15.96
	Lacaille 7661 . .	27	. .	. .	. .	20.8	22.3	24.8	43.3	46.0	47.6	48.9	50.7	11 38.05	− 31.19	2.69	18 11 9.55	16.05
	B. A. C. 6222 . .	28	28.8	31.2	32.4	42.8	44.1	45.4	46.6	47.7	58.0	59.3	1.5	13 45.25	+ 0.26	2.69	18 13 48.20	− 14.48
	δ Ursæ Minoris . .	29	. .	. .	. .	58.0	15.5	36.0	56.0	13.5	. .	. .	. .	16 35.80	− 1.29	2.68	18 16 37.19	+ 112.98
	B. A. C. 6274 . .	30	. .	. .	. .	15.0	16.7	18.9	37.1	39.8	41.3	42.6	44.2	21 31.95	− 30.49	2.68	18 21 4.14	− 15.72
	B. A. C. 6305 . .	31	15.6	17.2	18.7	20.4	23.1	. .	34.9	37.6	38.9	40.3	41.9	24 58.86	+ 0.62	2.68	18 25 2.16	15.63
	B. A. C. 6308 . .	32	48.8	51.4	52.7	4.1	5.5	7.0	8.3	9.4	20.7	22.3	24.5	25 6.79	+ 0.32	2.68	18 25 9.79	15.62
	B. A. C. 6317 . .	33	. .	. .	. .	. .	. .	. .	4.1	6.8	8.3	9.7	11.4	27 8.06	− 39.21	2.68	18 26 31.53	15.61
	B. A. C. 6334 . .	34	5.0	7.5	9.0	20.4	21.5	23.1	24.4	25.7	36.9	38.5	40.7	29 22.97	+ 0.32	2.67	18 29 25.96	15.56
	Lacaille 7815 . .	35	15.5	8.1	19.5	31.0	32.2	33.7	35.4	36.4	47.7	49.4	51.9	31 33.71	0.32	2.67	18 31 36.70	15.71
	51 (Hev.) Cephei, S. P.	36	. .	. .	. .	52.0	32.0	7.0	41.0	22.0	. .	. .	. .	35 6.80	1.60	2.67	6 35 11.07	90.53
	ζ Aquilæ	37	51.4	53.4	54.6	4.5	5.5	6.8	8.0	9.0	18.9	20.2	22.2	59 6.77	0.12	2.65	18 59 9.54	11.06
	Lacaille 8023 . .	38	31.5	34.0	35.2	47.1	48.4	49.5	51.1	52.4	3.9	5.4	7.8	2 49.66	0.32	2.65	19 2 52.63	15.38
	* — 29° 30′ . .	39	5.3	6.7	8.4	9.7	12.5	. .	21.6	24.1	25.6	26.8	28.5	5 46.92	0.58	2.64	19 5 50.14	14.84
	B. A. C. 6569 . .	40	19.0	20.6	22.2	23.6	26.5	. .	35.0	38.0	39.4	40.7	42.3	6 0.73	0.58	2.64	19 6 3.95	14.85
	ω Aquilæ	41	7.6	9.8	11.0	20.7	22.0	23.1	24.4	25.4	35.0	36.4	38.4	11 23.07	0.13	2.64	19 11 25.84	11.19
	Polaris . . .	†42	26.0	47.5	34.0	4.0	45.0	34.0	22.0	2.0	22.0	13.0	33.0	8 31.14	3.22	2.72	1 8 37.08	37.23
		43	57.5	50.5	43.5	35.0	11.0	. .	33.0	9.0	59.0	44.0	43.5					
15	Sun I	44	23.0	25.2	26.4	36.7	37.9	39.1	40.4	41.3	51.2	52.8	54.8	26 38.98	0.21	2.70	3 26 41.89	. .
	Sun II	45	37.3	39.3	40.6	50.8	52.0	53.2	54.5	55.5	5.5	6.8	9.0	28 53.14	0.21	2.70	3 28 56.05	. .
	α Tauri	46	46.1	48.3	49.6	59.5	0.6	1.8	3.2	4.2	14.0	15.3	17.5	28 1.83	0.20	2.70	4 28 4.73	− 11.27
	Mercury I	†47	24.3	26.3	27.6	38.4	39.4	40.9	42.2	43.3	53.7	55.2	57.4	58 40.79	0.23	2.70	4 58 43.72	+ 0.27
	β Orionis	48	39.8	41.9	43.1	52.9	54.0	55.1	56.3	57.4	7.0	8.1	10.1	7 55.06	0.15	2.70	5 7 57.91	− 9.30
	α Orionis	49	28.3	30.4	31.6	41.1	42.4	43.4	44.6	45.7	. .	. .	. .	47 38.44	5.18	2.70	5 47 46.32	− 10.76
	Venus I	50	0.4	2.7	4.0	14.6	15.9	17.1	18.4	19.6	30.1	31.5	33.7	4 17.09	0.23	2.70	6 4 20.02	+ 0.53
	α Canis Majoris . .	51	48.7	51.1	52.2	2.2	3.4	4.6	5.7	6.8	16.7	18.2	20.2	39 4.53	0.14	2.70	6 39 7.37	− 8.69
	δ Crateris	†52	14.0	16.1	17.3	27.1	28.3	29.5	30.7	31.8	41.4	42.8	44.9	12 29.45	0.15	2.62	11 12 32.22	11.65
	Lacaille 4725 . .	53	4.6	6.8	8.1	19.3	20.3	21.6	22.9	24.0	35.0	36.4	38.5	16 21.59	0.16	2.62	11 16 24.37	11.47
	Lacaille 4749 . .	54	34.2	36.4	37.7	48.4	49.5	50.8	52.0	53.3	3.6	5.0	7.2	20 50.74	0.15	2.61	11 20 53.50	11.57
	λ Draconis . . .	55	. .	.	. .	7.6	10.5	14.0	17.8	20.6	. .	. .	. .	23 14.10	+ 0.52	+ 2.61	11 23 17.23	− 14.35

42. Reduced from 11 wires.
47. Faint.
53. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 14, 16.6	+ 2.76	− 0.045	+ 0.160

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. May 15	B. A. C. 3928	1	58. 7	59. 9	2. 3	13. 7	14. 8	16. 2	17. 6	18. 8	29. 8	31. 3	33. 6	26 16. 15	+ 0. 16	+ 2. 61	11 26 18. 83	— 11. 62
	υ Leonis	2	40. 8	43. 0	44. 1	53. 8	54. 9	56. 0	57. 3	58. 3	7. 7	8. 9	10. 8	29 55. 96	0. 17	2. 61	11 29 58. 74	11. 84
	Lacaille 4849	3	16. 5	19. 0	20. 3	32. 1	33. 7	34. 7	36. 2	37. 5	48. 9	50. 6	52. 8	34 34. 72	+ 0. 16	2. 61	11 34 37. 49	11. 65
N.	Lacaille 4867	4	. .	. .	. .	4. 9	6. 0	7. 4	8. 7	9. 9	20. 7	22. 2	24. 6	13 13. 05	— 5. 54	2. 61	11 37 10. 12	11. 83
	β Leonis	5	48. 6	50. 6	51. 8	1. 8	3. 0	4. 3	5. 4	6. 5	16. 3	17. 6	19. 6	42 4. 14	+ 0. 19	2. 61	11 42 6. 94	12. 00
	B. A. C. 8314, S. P.	6	. .	. .	. .	18. 5	14. 5	10. 1	6. 0	2. 4	. .	. .	. .	48 10. 30	— 0. 63	2. 61	23 48 12. 28	8. 86
	B. A. C. 4070	7	. .	. .	. .	16. 0	33. 3	51. 8	10. 0	26. 0	. .	. .	. .	57 51. 42	+ 2. 77	2. 60	11 57 56. 79	19. 42
	Saturn I	8	52. 0	53. 9	55. 2	4. 8	5. 8	7. 0	8. 2	9. 3	18. 6	19. 8	21. 8	0 6. 95	0. 17	2. 60	12 0 9. 72	. .
	Saturn II	9	31. 7	33. 0	34. 3	35. 6	38. 0	. .	38. 0	40. 2	41. 5	42. 6	43. 9	0 7. 88	0. 42	2. 60	12 0 10. 90	. .
	4 Draconis	10	. .	. .	. .	34. 2	39. 3	45. 5	51. 6	56. 4	. .	. .	. .	5 45. 40	0. 88	2. 60	12 5 48. 88	13. 23
	Lacaille 5088	†11	20. 6	23. 1	24. 5	36. 5	37. 7	39. 0	40. 7	41. 8	53. 4	55. 0	57. 4	10 39. 06	+ 0. 16	2. 60	12 10 41. 82	12. 55
	Lacaille 5102	12	. .	. .	. .	53. 5	54. 6	56. 0	57. 7	59. 0	10. 7	12. 4	14. 9	12 2. 35	— 6. 09	2. 60	12 11 58. 86	12. 62
	Lacaille 5126	13	43. 8	46. 3	47. 5	59. 9	1. 2	2. 8	4. 3	5. 5	17. 2	18. 9	21. 3	16 2. 64	+ 0. 16	2. 60	12 16 5. 40	12. 70
	κ² Centauri	14	. .	. .	. .	7. 0	8. 3	9. 7	11. 3	12. 5	. .	. .	. .	18 9. 76	0. 10	2. 60	12 18 12. 46	12. 70
	B. A. C. 4202	15	47. 6	50. 1	51. 6	3. 7	5. 0	6. 6	8. 3	9. 7	21. 5	23. 2	25. 6	21 6. 63	0. 16	2. 60	12 21 9. 39	12. 86
	Lacaille 5187	16	19. 4	22. 2	23. 7	36. 7	37. 8	39. 5	41. 0	42. 3	54. 7	56. 4	58. 9	24 39. 33	0. 17	2. 60	12 24 42. 10	13. 02
	B. A. C. 4243	17	. .	. .	. .	21. 8	23. 2	24. 7	26. 3	27. 6	. .	. .	. .	28 24. 72	0. 11	2. 60	12 28 27. 43	13. 08
	Lacaille 5226	18	44. 5	47. 0	48. 5	0. 8	2. 2	3. 6	5. 3	6. 6	18. 5	20. 0	22. 7	31 3. 61	0. 16	2. 60	12 31 6. 37	13. 07
	Lacaille 5261	19	18. 5	21. 0	22. 4	34. 2	35. 4	36. 8	38. 2	39. 6	51. 0	52. 5	54. 9	36 36. 77	0. 16	2. 60	12 36 39. 53	13. 04
	B. A. C. 4297	20	52. 3	54. 5	55. 8	6. 7	7. 8	9. 1	10. 4	11. 6	22. 3	23. 7	25. 9	41 9. 10	0. 16	2. 59	12 41 11. 85	12. 85
	α Canum Venat.	21	17. 5	20. 1	21. 6	34. 2	35. 5	37. 0	38. 6	39. 8	52. 1	53. 7	56. 2	49 36. 94	0. 26	2. 59	12 49 39. 79	11. 36
	Lacaille 5374	22	39. 6	41. 9	43. 2	54. 4	55. 4	56. 7	58. 0	59. 4	10. 1	11. 6	13. 9	55 56. 75	+ 0. 22	2. 59	12 55 59. 56	13. 16
	Polaris, S. P.	23	51. 0	31. 0	40. 0	. .	. .	. .	. .	. .	54. 0	0. 0	45. 5	8 46. 92	— 10. 68	2. 59	13 8 38. 83	37. 59
	Jupiter I	24	4. 9	6. 9	8. 2	18. 0	19. 0	20. 2	21. 3	22. 3	31. 7	33. 2	35. 2	11 20. 08	+ 0. 16	2. 59	13 11 22. 83	. .
	Jupiter II	25	46. 3	47. 6	49. 0	50. 3	52. 5	. .	53. 0	55. 3	56. 5	57. 7	59. 0	11 22. 72	0. 41	2. 59	13 11 25. 72	. .
	Lacaille 5582	26	3. 2	5. 6	6. 9	17. 6	18. 8	19. 9	21. 3	22. 5	32. 9	34. 4	36. 6	25 19. 97	0. 15	2. 58	13 25 22. 70	13. 44
	ζ Virginis	27	28. 2	30. 2	31. 4	41. 1	42. 2	43. 3	44. 6	45. 5	55. 0	56. 2	58. 2	27 43. 26	0. 17	2. 58	13 27 46. 01	12. 29
	* — 39° 57′	†28	. .	35. 4	36. 8	49. 3	50. 6	51. 9	53. 9	55. 2	7. 5	9. 2	. .	13 52. 20	0. 20	2. 53	17 13 54. 93	16. 95
	b Ophiuchi	29	45. 0	47. 2	48. 5	59. 1	0. 2	1. 6	2. 8	3. 9	14. 2	15. 7	17. 8	18 1. 46	0. 18	2. 52	17 18 4. 16	14. 78
	Comet 1863, II	30	25. 9	39. 3	44. 0	29. 8	34. 5	38. 7	42. 6	47. 3	33. 3	39. 3	48. 1	23 38. 44	0. 83	2. 52	17 23 41. 79	. .
	α Ophiuchi	31	19. 4	21. 6	22. 8	32. 7	33. 8	34. 9	36. 2	37. 3	46. 9	48. 3	50. 3	28 34. 93	0. 17	2. 52	17 28 37. 62	11. 42
	ω Draconis	32	3. 7	9. 5	12. 7	39. 3	42. 3	45. 6	49. 0	51. 8	17. 7	21. 5	26. 9	37 45. 45	+ 0. 47	2. 52	17 37 48. 44	1. 87
	Polaris	33	. .	. .	. .	. .	. .	. .	. .	. .	22. 0	13. 5	31. 0	17 22. 17	— 8 45. 72	2. 40	1 8 38. 85	37. 95
16	Sun I	34	20. 2	22. 3	23. 4	33. 7	34. 7	35. 9	37. 4	38. 4	48. 5	49. 7	51. 9	30 36. 01	+ 0. 21	2. 68	3 30 38. 90	. .
Y.	Sun II	35	34. 5	36. 6	37. 9	48. 1	49. 3	50. 5	51. 8	52. 8	2. 9	4. 2	6. 4	32 50. 45	0. 21	2. 68	3 32 53. 34	. .
	α Tauri	36	46. 2	48. 3	49. 5	59. 6	0. 7	1. 9	3. 1	4. 2	14. 0	15. 4	17. 4	28 1. 85	0. 20	2. 69	4 28 4. 74	— 11. 27
	Mercury I	37	36. 8	39. 0	40. 3	51. 0	52. 3	53. 5	54. 8	55. 9	6. 4	7. 9	10. 1	3 53. 45	0. 22	2. 70	5 3 56. 37	+ 0. 27
	β Orionis	38	39. 9	41. 9	43. 0	52. 8	53. 9	55. 1	56. 3	57. 3	6. 9	8. 2	10. 3	7 55. 05	0. 17	2. 70	5 7 57. 92	— 9. 29
	β Tauri	39	19. 1	21. 5	22. 8	33. 5	34. 9	36. 3	37. 7	38. 7	49. 5	51. 1	53. 3	17 36. 22	0. 23	2. 70	5 17 39. 15	13. 53
	α Orionis	40	28. 4	30. 4	31. 5	41. 3	42. 3	43. 6	44. 7	45. 8	55. 4	56. 6	58. 5	47 43. 45	0. 18	2. 71	5 47 46. 34	10. 76
	Venus I	41	12. 0	14. 2	15. 6	26. 2	27. 5	28. 8	30. 1	31. 2	41. 8	43. 1	45. 4	9 28. 72	0. 22	2. 72	6 9 31. 66	. .
	Venus II	42	49. 0	50. 4	51. 8	53. 2	56. 0	. .	2. 7	5. 2	6. 6	8. 0	9. 4	9 29. 23	0. 50	2. 72	6 9 32. 45	. .
	α Canis Majoris	43	48. 8	50. 9	52. 1	2. 2	3. 3	4. 5	5. 8	6. 8	16. 8	18. 0	20. 0	39 4. 47	0. 16	2. 73	6 39 7. 36	8. 68
	Lalande 23270	44	29. 7	31. 7	33. 0	42. 6	43. 7	44. 9	46. 0	47. 0	56. 6	57. 8	59. 8	19 44. 80	0. 17	2. 82	12 19 47. 79	12. 14
	Weisse 402	45	20. 9	23. 1	24. 2	33. 9	34. 9	36. 1	37. 3	38. 4	47. 9	49. 1	51. 1	24 36. 08	0. 17	2. 82	12 24 39. 07	12. 16
	β Corvi	46	55. 6	57. 8	59. 1	9. 4	10. 6	11. 8	13. 2	14. 2	24. 6	25. 9	28. 1	27 11. 85	0. 17	2. 82	12 27 14. 84	12. 51
	Weisse 519	47	25. 6	27. 7	29. 0	38. 9	40. 0	41. 3	42. 4	43. 5	53. 4	54. 6	56. 5	31 41. 17	+ 0. 19	2. 82	12 31 44. 18	11. 92
	* + 14° 34′	48	. .	. .	. .	. .	. .	. .	28. 3	30. 8	32. 0	33. 2	34. 5	32 31. 76	— 34. 06	2. 82	12 32 0. 52	11. 92
	Weisse 526	49	4. 7	5. 7	6. 8	8. 2	9. 3	. .	37. 7	40. 1	41. 3	42. 4	43. 9	32 24. 01	— 16. 95	2. 82	12 32 9. 88	11. 92
	Weisse 632	50	46. 9	49. 0	50. 2	0. 2	1. 3	2. 5	3. 5	4. 7	14. 4	15. 8	17. 8	38 2. 39	+ 0. 19	2. 82	12 38 5. 40	11. 92
	Weisse 646	51	. .	. .	. .	31. 5	32. 5	33. 8	35. 1	36. 0	. .	. .	. .	38 33. 78	0. 14	2. 82	12 38 36. 74	11. 92
	Weisse 652	52	. .	. .	. .	0. 4	1. 6	2. 8	4. 1	5. 1	. .	. .	. .	39 28. 00	0. 15	2. 82	12 39 5. 77	11. 92
	28 Comæ	53	6. 8	9. 0	10. 2	20. 1	21. 2	22. 4	23. 7	24. 7	34. 4	35. 7	37. 9	41 22. 37	0. 20	2. 82	12 41 25. 39	11. 91
	Weisse 757	54	35. 5	37. 6	38. 8	48. 5	49. 5	50. 7	51. 9	52. 9	2. 4	3. 5	5. 5	44 50. 62	0. 17	2. 82	12 44 53. 61	12. 16
	Weisse 803	55	28. 2	30. 3	31. 5	41. 2	42. 3	43. 4	44. 7	45. 7	55. 3	56. 6	58. 6	47 43. 44	+ 0. 16	+ 2. 82	12 47 46. 42	— 12. 43

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 15, 5. 5	+ 2. 70	0. 000	+ 0. 166
13. 6	+ 2. 58	— 0. 015	. .

28. Declination may be 39° 37′.

May 15, 18h. Image east 0. 17. Clamp west.
Image west 0. 22. Clamp east.
Image east 0. 15. Clamp west.

May 15. 3h. to 7h. n. = + 0. 100.
11h. to 14h. 0. 060.
17h. to 7h. + 0. 010.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 16	Weisse 878 . . .	1	42.8	44.8	45.9	55.6	56.7	57.8	59.0	0.0	9.4	10.8	12.8	51 57.78	+ 0.17	+ 2.83	12 52 0.78	— 12.25
	Weisse 918 . . .	2	. .	. .	. .	12.0	13.0	14.1	15.4	16.4	. .	. .	. .	54 14.18	0.11	2.83	12 54 17.12	12.50
	θ Virginis	3	36.5	38.5	39.7	49.4	50.5	51.7	52.9	53.9	3.4	4.6	6.6	2 51.61	0.17	2.83	13 2 54.61	12.39
Y.	Σ. C. Gen. 1510, 1st *	4	30.5	32.6	33.8	43.6	44.8	45.9	47.0	48.2	57.8	59.1	1.1	7 45.85	+ 0.16	2.83	13 7 48.84	12.61
	Σ. C. Gen. 1510, 2d *	5	. .	. .	. .	. .	. .	. .	19.6	22.0	23.1	24.3	25.7	8 22.94	— 33.57	2.83	13 7 52.20	12.61
	Polaris, S. P. . .	6	54.0	31.5	44.0	. .	. .	. .	. .	. .	54.0	4.0	45.0	8 48.75	— 10.92	2.83	1 8 40.66	38.31
	Jupiter I . . .	7	45.8	47.9	49.1	. .	. .	. .	. .	. .	12.9	14.0	16.0	11 0.95	+ 0.21	2.83	13 11 3.99	. .
	Jupiter II . . .	8	. .	. .	. .	1.7	2.8	3.8	5.1	6.2	. .	. .	. .	11 3.92	0.12	2.83	13 11 6.87	. .
	Weisse 365 . . .	9	52.8	54.9	56.1	5.8	6.9	8.1	9.2	10.2	19.8	21.1	23.1	23 8.00	0.18	2.83	13 23 11.01	12.07
	Weisse 413 . . .	10	9.9	12.0	13.2	22.8	23.9	25.1	26.3	27.4	36.9	38.1	40.2	25 25.07	0.18	2.83	13 25 28.08	12.10
	ζ Virginis	11	27.9	29.9	31.1	40.7	41.9	43.0	44.3	45.3	54.6	56.0	57.9	27 42.96	0.17	2.83	13 27 45.96	12.28
	B. A. C. 4547 . .	12	27.3	29.4	30.5	40.2	41.2	42.3	43.5	44.5	54.1	55.3	57.3	30 42.33	0.17	2.84	13 30 45.34	12.46
	89 Virginis	13	10.6	12.8	14.0	24.0	25.1	26.4	27.7	28.8	38.6	40.0	41.9	42 26.35	0.16	2.84	13 42 29.35	13.19
	i Draconis . . .	14	49.6	54.8	57.5	20.6	23.2	26.1	28.9	31.3	53.9	57.1	1.7	47 25.88	0.54	2.84	13 47 29.26	8.69
	τ Virginis . . .	15	25.7	27.7	28.9	38.5	39.6	40.8	41.9	42.9	52.4	53.7	55.7	54 40.77	0.17	2.84	13 54 43.78	12.35
	α Draconis . . .	16	5.3	10.2	13.0	35.8	38.3	41.0	43.9	46.7	8.7	11.8	16.4	0 40.96	0.53	2.84	14 0 44.33	8.31
	d Bootis	17	52.2	54.6	55.9	6.6	7.8	9.0	10.4	11.5	22.0	23.5	25.6	4 9.01	0.22	2.84	14 4 12.07	11.27
	2 Libræ	18	48.7	50.8	51.9	1.7	2.8	3.9	5.2	6.2	15.9	17.2	19.2	16 3.95	0.16	2.85	14 16 6.96	13.09
	θ Bootis	19	7.2	10.5	12.4	28.5	30.1	32.1	34.1	35.6	51.2	53.1	56.5	20 31.94	0.26	2.85	14 20 35.15	9.35
	ρ Bootis	20	37.8	40.1	41.6	52.9	54.3	55.5	56.8	58.2	9.1	10.6	12.8	25 55.43	0.24	2.85	14 25 58.52	10.82
	σ Bootis	21	25.4	27.8	29.2	40.3	41.4	42.9	44.3	45.4	56.4	57.9	0.2	28 42.84	0.24	2.85	14 28 45.93	10.87
	B. Z. 292, 1 . . .	22	17.7	19.9	21.3	31.7	32.9	34.2	35.5	36.7	46.7	48.2	50.4	33 34.11	0.21	2.85	14 33 37.17	11.27
	ε (Comp.) Bootis .	23	18.9	20.4	21.8	23.3	26.0	. .	33.8	36.3	37.8	39.2	40.7	38 59.82	0.51	2.85	14 39 3.18	10.96
	ε Bootis	24	43.3	45.6	47.0	57.8	58.9	0.3	1.6	2.8	13.5	15.1	17.2	39 0.28	0.23	2.85	14 39 3.36	10.96
	11 Libræ	25	40.3	42.3	43.5	53.1	54.1	55.4	56.5	57.6	7.0	8.3	10.2	43 55.30	0.17	2.85	14 43 58.32	12.65
	β Libræ	26	23.6	25 6	26.8	36.6	37.6	38.5	40.0	41.0	50.7	51.8	53.9	9 38.76	0.17	2.86	15 9 41.79	13.17
	Weisse 254 . . .	27	1.2	3.2	4.2	14.3	15.5	16.5	17.8	18.8	28.6	29.8	31.7	15 16.51	0.16	2.86	15 15 19.53	13.52
	*O. Arg. N. 15370 .	28	1.9	5.2	7.0	22.2	24.0	25.9	27.8	29.3	44.4	46.5	49.6	21 25.80	0.35	2.86	15 21 29.01	8.51
	γ Libræ	29	37.0	39.1	40.4	50.2	51.4	52.6	53.7	54.8	4.6	6.0	7.9	27 52.52	0.16	2.87	15 27 55.55	13.75
	42 Libræ	30	55.5	57.9	59.2	9.7	10.9	12.2	13.5	14.5	24.8	26.1	28.4	32 12.06	0.17	2.87	15 32 15.10	14.48
	κ Libræ	31	48.2	50.4	51.6	1.9	2.9	4.3	5.4	6.5	16.5	17.8	20.0	34 4.14	0.16	2.87	15 34 7.17	14.11
	η Libræ	32	7.3	9.3	10.5	20.5	21.7	22.5	24.2	25.2	35.0	36.3	38.4	36 22.84	0.16	2.87	15 36 25.87	13.77
	ε Serpentis . . .	33	44.5	46.5	47.8	57.5	58.5	59.7	0.9	1.8	11.4	12.7	14.6	43 59.63	0.18	2.87	15 44 2.68	12.28
	χ Herculis . . .	34	35.7	38.6	40.3	53.4	54.7	56.4	58.0	59.4	12.3	14.0	16.8	47 56.33	0.29	2.87	15 47 59.49	9.15
	δ Scorpii	35	58.7	1.0	2.3	12.8	13.9	15.0	16.4	17.5	27.7	29.0	31.1	52 15.04	0.17	2.87	15 52 18.08	14.47
	Weisse 1080 . .	36	16.2	18.2	19.3	29.0	30.1	31.3	32.5	33.4	42.9	44.1	46.2	57 31.20	0.17	2.87	15 57 34.24	12.53
	Weisse 20 . . .	†37	25.8	27.9	28.9	38.7	39.8	40.8	42.1	43.1	52.6	54.0	55.9	2 40.87	0.17	2.88	16 2 43.92	12.84
	ε Ophiuchi . . .	38	49.9	51.9	53.1	2.7	3.8	4.5	6.1	7.1	16.6	18.0	19.8	11 4.90	0.17	2.88	16 11 7.95	12.94
	Ψ Ophiuchi . . .	39	50.1	52.3	53.5	3.8	5.0	6.2	7.4	8.5	18.6	19.9	22.0	16 6.12	0.16	2.88	16 16 9.16	14.30
	O. Arg. S. 15671 .	40	0.8	2.2	3.7	5.0	7.6	. .	13.7	16.2	17.6	18.9	20.5	21 40.62	0.44	2.88	16 21 43.94	14.84
	22 Scorpii	41	37.6	39.8	41.0	51.8	52.5	54.3	55.5	56.6	7.0	8.3	10.5	21 54.12	0.17	2.88	16 21 57.17	14.84
	τ Scorpii	42	5.3	7.7	9.0	19.9	21.1	22.5	23.8	24.9	35.6	37.1	39.3	27 22.38	0.17	2.88	16 27 25.43	15.20
	ζ Ophiuchi . . .	43	22.3	24.3	25.6	35.4	36.5	37.6	38.9	39.8	49.4	50.8	52.7	29 37.57	0.16	2.88	16 29 40.61	13.45
	α Herculis . . .	44	8.6	10.7	11.9	21.8	22.9	24.2	25.5	26.4	36.2	37.6	39.6	8 24.13	0.19	2.89	17 8 27.21	11.32
	α^2 Herculis . . .	45	46.8	48.2	49.6	50.8	53.2	. .	55.3	57.7	58.9	0.1	1.5	8 24.21	0.45	2.89	17 8 27.55	11.32
17	α Andromedæ . .	46	59.4	1.9	3.1	14.0	15.2	16.7	18.0	19.1	30.0	31.4	33.6	1 16.58	0.22	3.35	0 1 20.15	10.70
	Polaris . . .	47	58.0	52.0	42.5	35.0	11.5	. .	35.0	8.0	57.5	42.0	43.0	8 31 36	8.21	3.19	1 8 42.76	39.41
		†48	25.0	47.0	35.0	4.5	45.5	33.0	21.0	1.5	23.5	17.0	32.0					
N.	β Arietis	†49	46.3	48.5	49.8	59.9	1.2	2.4	3.7	4.8	14.9	16.3	18.3	47 2.37	0.20	3.18	1 47 5.75	10.98
18	Sun I	50	15.9	18.0	19.2	29.4	30.7	31.9	33.3	34.3	44.3	45.7	47.8	38 31.86	0.20	3.17	3 38 35.23	. .
	Sun II	51	30.4	32.6	34.0	44.1	45.3	46.6	47.7	48.7	. .	. .	. .	40 41.18	5.47	3.17	3 40 49.82	. .
	β Orionis . . .	52	39.5	41.5	42.7	52.3	53.5	54.7	55.8	56.9	6.4	7.7	9.7	7 54.61	+ 0.17	3.16	5 7 57.94	9.30
	Polaris, S. P . .	53	. .	. .	. .	12.0	29.0	42.0	56.0	14.0	. .	. .	. .	8 42.60	— 3.70	3.09	1 8 41.99	39.78
	ζ Virginis . . .	54	27.6	29.7	30.8	40.5	41.5	42.7	43.9	44.9	54.3	55.6	57.6	27 42.65	+ 0.18	3.09	13 27 45.92	12.26
	Lacaille 5639 . .	55	52.2	54.6	56.0	7.5	8.9	10.2	11.7	13.0	24.4	25.9	28.4	33 10.25	+ 0.25	3.09	13 33 13.59	— 14.00

37. Faint.
48. Unsteady over set E.
49. B uncertain.
May 16. Night thick; stars steady; magnitude not very reliable.

May 16. n. = + 0.060 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 16, 11.9	+ 2.81	+ 0.016	+ 0.172

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 18	* — 37° 55′	1	53.2	55.7	57.0	9.4	10.8	12.4	13.9	15.2	27.1	28.6	31.2	44 12.23	+ 0.27	+ 3.09	13 44 15.59	— 14.54
Y.	τ Virginis	2	25.4	27.5	28.6	38.4	39.4	40.5	41.7	42.7	52.3	53.4	55.4	54 40.48	+ 0.18	3.09	13 54 43.75	12.34
	Lacaille 5855	3	. .	. .	. .	37.9	39.0	40.3	41.5	42.6	53.0	54.0	56.5	4 45.65	— 5.22	3.09	14 4 43.52	13.76
	ρ Bootis	4	37.8	40.2	41.5	52.8	54.0	55.4	56.8	58.0	8.7	10.2	12.6	25 55.27	+ 0.19	3.09	14 25 58.55	10.80
	Polaris	5	58.5	53.5	45.0	33.0	10.0	. .	34.5	8.0	56.0	39.0	40.0	8 29.27	11.30	3.00	1 8 43.57	40.15
		6	25.5	45.5	33.0	2.5	41.0	29.0	20.0	57.5	23.0	14.0	31.0					
19	Sun I	7	14.3	16.4	17.7	27.9	28.9	30.3	31.5	32.7	42.7	44.1	46.2	42 30.24	0.23	3.45	3 42 33.92	. .
	Sun II	8	29.9	31.2	32.3	42.9	43.9	45.1	46.2	47.5	57.6	58.9	0.9	44 45.13	0.23	3.46	3 44 48.82	. .
	β Orionis	†9	39.1	41.3	42.5	52.1	53.3	54.3	55.5	56.5	6.1	7.4	9.5	7 54.32	0.18	3.47	5 7 57.97	— 9.30
	Mercury I	†10	31.7	34.2	35.3	. .	. .	. .	. .	. .	1.3	2.7	5.2	17 48.40	+ 0.29	3.47	5 17 52.16	+ 0.29
	α Orionis	11	. .	. .	. .	. .	. .	. .	12.9	15.1	16.2	17.5	18.9	48 16.12	— 33.23	3.48	5 47 46.37	— 10.75
	Venus I	12	43.8	46.1	47.5	58.1	59.4	0.7	2.0	3.0	13.6	15.0	17.1	25 0.57	+ 0.25	3.49	6 25 4.31	+ 0.54
	γ Geminorum	13	29.7	31.8	33.2	43.1	44.4	45.5	46.8	47.8	57.5	58.9	1.0	29 45.43	0.22	3.49	6 29 49.14	— 11.64
	α Canis Majoris	14	48.0	50.2	51.3	1.5	2.5	3.8	4.9	6.0	15.9	17.2	19.2	39 3.68	0.17	3.49	6 39 7.34	8.65
	ν Leonis	15	39.9	42.0	43.0	52.7	53.8	55.0	56.2	57.2	6.6	7.8	9.7	29 54.90	0.19	3.55	11 29 58.64	11.80
	B. A. C. 3962	16	6.5	8.5	9.7	19.4	20.3	21.5	22.7	23.7	33.2	34.4	36.4	33 21.48	0.19	3.55	11 33 25.22	11.83
	Weisse 624	17	2.7	4.8	6.0	15.6	16.7	17.8	19.0	20.0	29.6	30.9	32.8	36 17.81	0.19	3.55	11 36 21.55	11.84
	Carrington 1762	†18	. .	. .	. .	6.0	28.0	51.5	14.0	32.5	. .	. .	. .	44 50.40	3.25	3.55	11 44 57.20	23.40
	Weisse 895	19	17.4	19.5	20.6	30.3	31.3	32.5	33.5	34.6	44.0	45.4	47.4	52 32.41	+ 0.19	3.55	11 52 36.15	11.92
	Weisse 921	20	. .	. .	. .	11.0	12.3	14.3	29.4	31.8	32.9	34.1	35.5	54 25.16	— 25.77	3.55	11 54 2.94	11.92
	Saturn I	21	7.4	8.7	10.1	11.3	13.4	. .	13.8	16.2	17.4	18.5	20.0	59 43.68	+ 0.44	3.55	11 59 47.67	. .
	Saturn II	22	30.0	32.0	33.3	43.0	44.0	45.1	46.3	47.3	56.9	58.0	0.0	59 45.08	+ 0.19	3.55	11 59 48.82	. .
	Weisse 1030	23	. .	. .	. .	. .	. .	. .	40.1	42.3	43.6	44.7	46.2	1 43.38	— 33.03	3.55	12 1 13.90	11.98
	Weisse 49	24	15.0	17.2	18.3	28.0	29.2	30.3	31.4	32.5	42.1	43.3	45.4	4 30.25	+ 0.19	3.56	12 4 34.00	11.94
	Weisse 144	25	10.9	13.0	14.2	24.0	25.0	26.2	27.3	28.4	37.9	39.2	41.1	10 26.11	0.19	3.56	12 10 29.86	11.95
	η Virginis	26	37.8	40.0	41.1	50.7	51.8	53.0	54.0	55.0	4.7	5.8	7.9	12 52.89	0.19	3.56	12 12 56.64	12.01
	Weisse 252	27	50.2	52.3	53.4	3.2	4.2	5.4	6.6	7.6	17.2	18.4	20.3	16 5.35	+ 0.19	3.56	12 16 9.10	11.96
	Lalande 23219	28	. .	. .	. .	39.7	40.8	42.1	43.3	44.3	53.8	55.0	57.0	17 47.00	— 4.81	3.56	12 17 45.75	12.10
	Weisse 345	29	4.6	6.7	8.0	17.8	19.0	20.1	21.3	22.3	32.0	33.4	35.4	21 20.05	+ 0.20	3.56	12 21 23.81	11.92
	Weisse 402	30	20.2	22.3	23.4	33.0	34.1	35.3	36.5	37.5	47.1	48.3	50.3	24 35.27	0.19	3.56	12 24 39.02	12.14
	Weisse 461	31	55.7	57.8	58.9	8.9	10.0	11.2	12.4	13.5	23.2	24.6	26.5	28 11.15	+ 0.20	3.56	12 28 14.91	11.91
	B. Z. 409, 96	32	. .	. .	. .	33.0	34.6	37.0	54.9	57.8	59.2	0.5	2.4	30 49.92	— 30.66	3.56	12 30 22.82	11.67
	* + 14° 14′	33	17.1	19.3	20.6	30.6	31.6	32.8	34.0	35.0	45.0	46.1	48.1	37 32.75	+ 0.20	3.56	12 37 36.51	11.90
	Weisse 632	34	. .	. .	. .	59.3	0.4	1.7	2.8	3.8	. .	. .	. .	38 1.60	0.15	3.56	12 38 5.31	11.90
	Weisse 652	†35	46.5	48.5	49.8	. .	. .	. .	. .	. .	. .	. .	. .	38 48.27	13.92	3.56	12 39 5.75	11.90
	29 Comæ	†36	45.7	47.8	49.1	59.1	0.1	1.4	2.6	3.7	13.4	14.8	16.8	42 1.32	0.20	3.56	12 42 5.08	11.88
	Weisse 819	†37	22.6	24.8	25.9	35.5	36.7	37.8	39.0	40.0	49.4	50.7	52.7	48 37.74	0.19	3.56	12 48 41.49	12.21
	Weisse 878	†38	41.9	43.8	45.0	54.7	55.7	57.0	58.2	59.2	8.7	9.9	11.9	51 56.91	+ 0.19	3.56	12 52 0.66	12.23
	α¹ Ursæ Minoris, S. P.	39	28.0	46.0	17.0	. .	. .	. .	. .	. .	32.0	40.0	21.0	8 24.00	— 10.27	3.57	1 8 17.30	40.51
	Polaris, S. P.	40	56.5	33.5	41.0	. .	. .	. .	. .	. .	58.0	5.0	45.0	8 49.83	— 10.27	3.57	1 8 43.13	40.51
	Σ. C. Gen. 1510, 1st *	41	29.9	31.8	33.2	. .	. .	. .	. .	. .	57.0	58.3	0.3	7 45.08	+ 0.23	3.57	13 7 48.88	12.60
	Σ. C. Gen. 1510, 2d *	42	. .	. .	. .	46.2	47.2	48.4	49.7	50.6	. .	. .	. .	7 48.42	0.14	3.57	13 7 52.13	12.60
	Jupiter I	43	30.6	31.9	33.0	34.2	36.8	. .	37.2	39.6	40.7	42.0	43.3	10 6.93	0.44	3.57	13 10 10.94	. .
	Jupiter II	44	54.9	57.0	58.0	7.8	9.0	10.2	11.4	12.5	21.9	23.2	25.1	10 10.09	0.19	3.57	13 10 13.85	. .
	Weisse 365	45	51.9	54.0	55.1	5.1	6.0	7.2	8.4	9.5	19.0	20.3	22.4	23 7.17	0.19	3.57	13 23 10.93	12.06
	Weisse 413	46	9.1	11.1	12.4	22.2	23.2	24.4	25.5	26.6	36.1	37.4	39.4	25 24.31	0.19	3.57	13 25 28.07	12.09
	* + 80° 50′	47	. .	. .	. .	26.2	33.4	40.9	48.4	54.3	. .	. .	. .	28 40.84	1.05	3.57	13 28 45.46	4.89
	* + 77° 17′	48	47.0	56.4	1.4	45.8	50.6	56.1	1.2	5.7	48.4	54.3	2.6	32 55.41	0.98	3.57	13 32 59.96	6.39
	Lacaille 5680	49	21.3	24.1	25.6	37.4	38.8	40.0	41.5	42.8	54.7	56.1	58.4	40 40.06	0.22	3.57	13 40 43.85	14.36
	B. A. C. 4620	50	17.7	20.4	21.7	33.8	34.9	36.5	37.9	39.2	50.9	52.4	54.9	43 36.39	0.22	3.57	13 43 40.18	14.36
	Lacaille 5758	51	15.6	18.2	19.5	31.9	33.1	34.6	36.2	37.5	49.4	50.8	53.5	48 34.57	0.22	3.58	13 48 38.37	14.48
	Lacaille 5769	52	33.2	36.1	37.4	49.6	51.0	52.7	54.0	55.2	7.0	8.6	11.2	49 52.36	+ 0.22	3.58	13 49 56.16	14.62
	Lacaille 5785	53	. .	. .	. .	. .	. .	. .	25.0	27.4	28.7	29.9	31.4	53 28.48	— 36.56	3.58	13 52 55.50	13.77
	Lacaille 5800	54	12.5	15.0	16.6	28.1	29.6	31.0	32.6	33.9	45.3	46.8	49.3	56 30.97	+ 0.21	3.58	13 56 34.76	14.55
	Lacaille 5819	55	. .	. .	. .	22.4	23.8	25.2	26.6	27.8	. .	. .	. .	58 25.16	+ 0.15	+ 3.58	13 58 28.89	— 14.49

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 18, 9.7	+ 3.12	— 0.008	+ 0.184
19, 10.8	+ 3.54	+ 0.012	+ 0.190

9. Faint.
10. Very faint.
18. Bad night.
35. Galvanic connexion breaks.
36–37–38. The minutes of these stars are assumed, and the seconds are doubtful.

			s.
May 17–18,	0h. to 6h.	n. =	+ 0.020.
	13h. to 15h.		— 0.045.
19,	3h. to 7h.		+ 0.090.
	11h. to 16h.		+ 0.025.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
19	Lacaille 5824	1	23.5	25.9	27.3	39.0	40.3	41.8	43.2	44.5	55.9	57.6	59.8	59 41.71	+ 0.21	+ 3.58	13 59 45.50	− 14.51
	Lacaille 5956	2	21.2	23.5	24.8	35.5	36.6	38.0	39.4	40.4	50.9	52.2	54.5	21 37.91	0.20	3.58	14 21 41.69	14.09
	ρ Bootis	3	37.2	39.5	40.9	52.1	53.4	54.8	56.1	57.3	8.3	9.8	12.0	25 54.67	0.24	3.58	14 25 58.49	10.82
	3 Libræ	4	11.2	13.5	14.7	25.4	26.6	27.8	29.1	30.3	40.5	42.0	44.2	31 27.75	0.20	3.58	14 31 31.53	14.19
	Lacaille 6060	5	7.3	9.8	11.0	21.8	23.0	24.3	25.6	26.9	37.5	38.9	41.1	34 24.29	0.20	3.59	14 34 28.08	14.37
	54 Hydræ	6	24.5	25.9	27.3	28.7	31.4	- -	37.7	40.2	41.4	42.7	44.4	38 4.42	0.48	3.59	14 38 8.49	14.29
	* — 24° 51′	7	48.7	51.0	52.1	2.8	3.9	5.3	6.4	7.6	18.0	19.4	21.5	38 5.15	0.20	3.59	14 38 8.94	14.29
	B. A. C. 4884	8	16.0	18.3	19.5	30.1	31.3	32.6	33.8	35.0	45.6	46.8	49.0	40 32.55	0.20	3.59	14 40 36.34	14.33
	α Libræ	9	2.6	4.6	5.8	15.9	17.0	18.1	19.3	20.3	30.2	31.6	33.5	43 18.08	0.19	3.59	14 43 21.86	13.53
	B. A. C. 4912	10	58.7	1.1	2.4	14.0	15.3	16.7	18.2	19.3	30.7	32.1	34.4	46 16.63	0.21	3.59	14 46 20.43	15.02
	Lacaille 6157	11	41.4	43.8	45.2	56.7	57.9	59.3	0.7	1.9	13.2	14.5	16.9	48 59.23	+ 0.21	3.59	14 49 3.03	14.99
	Lacaille 6164	12	- -	- -	- -	33.9	35.3	37.7	55.3	58.1	59.3	0.7	2.6	49 50.36	− 30.17	3.59	14 49 23.78	15.01
	Lacaille 6190	13	12.5	15.2	16.6	28.1	29.5	30.9	32.3	33.6	45.0	46.3	48.8	53 30.80	+ 0.21	3.59	14 53 34.60	15.22
	Lacaille 6218	14	45.9	48.4	49.7	0.9	2.0	3.3	4.7	5.8	16.7	18.2	20.6	57 3.29	0.20	3.59	14 57 7.08	14.81
	B. A. C. 4972	15	0.8	2.9	4.4	14.7	16.1	17.3	18.5	19.7	29.9	31.4	33.5	59 17.20	0.20	3.59	14 59 20.99	14.30
	Lacaille 6258	16	58.7	1.3	2.6	14.0	15.3	16.7	18.1	19.3	30.9	32.1	34.5	3 16.68	0.21	3.59	15 3 20.48	15.26
	1 Lupi	17	57.0	59.4	0.7	12.0	13.2	14.5	16.0	17.2	28.1	29.6	32.0	6 14.52	0.21	3.59	15 6 18.32	15.06
	β Libræ	18	22.8	24.9	26.1	35.9	36.9	38.1	39.3	40.4	49.9	51.2	53.1	9 38.05	0.19	3.59	15 9 41.83	13.20
	Weisse 210	†19	31.5	33.6	34.8	44.5	45.6	46.8	48.2	49.1	58.7	59.9	2.3	12 46.82	0.19	3.59	15 12 50.60	13.55
	B. A. C. 5066	20	33.2	35.4	36.7	47.5	48.7	50.0	51.2	52.4	3.0	4.3	6.8	15 49.93	0.20	3.59	15 15 53.72	14.72
	B. A. C. 5090	21	23.2	25.4	26.8	37.7	38.9	40.2	41.6	42.8	53.6	55.0	57.2	20 40.22	0.20	3.59	15 20 44.01	14.92
	B. A. C. 5111 (1st *)	22	46.5	48.7	49.9	0.5	1.7	3.0	4.3	5.4	15.8	17.1	19.3	25 2.93	0.20	3.60	15 25 6.73	14.52
	B. A. C. 5111 (2d *)	23	23.6	25.0	26.5	27.9	30.5	- -	36.3	38.8	40.0	41.4	42.8	25 3.28	+ 0.47	3.60	15 25 7.35	14.52
	B. A. C. 5127	24	- -	-	- -	- -	- -	- -	33.8	36.5	37.8	39.0	40.7	27 37.56	− 37.54	3.60	15 27 3.62	14.99
	B. A. C. 5163	25	1.6	4.0	5.3	16.2	17.5	18.6	20.1	21.2	31.8	33.2	35.4	31 18.63	+ 0.20	3.60	15 31 22.43	14.88
	α Serpentis	†26	15.7	17.8	18.8	28.6	29.7	30.7	32.1	33.0	42.5	43.9	45.9	37 30.79	0.19	3.60	15 37 34.58	12.17
	Polaris	†27	- -	- -	- -	2.5	46.0	34.0	23.0	1.0	- -	- -	- -	8 33.30	+ 6.77	3.49	1 8 43.56	40.87
20	Sun I	28	- -	- -	- -	42.2	43.7	47.8	1.4	3.9	5.4	6.5	8.2	46 57.39	− 27.15	3.54	3 46 33.78	- -
	Sun II	29	28.8	30.8	32.1	42.3	43.5	44.7	45.9	47.0	57.2	58.5	0.7	48 44.65	+ 0.24	3 54	3 48 48.43	- -
	α Orionis	30	27.4	29.5	30.6	40.3	41.4	42.6	43.9	44.8	54.4	55.7	57.7	47 42.57	0.21	3.58	5 47 46.36	10.75
	α Canis Majoris	31	48.0	50.0	51.3	1.4	2.4	3.7	4.9	5.9	15.9	17.1	19.3	39 3.63	+ 0.17	3.60	6 39 7.40	8.65
	Polaris, S. P.	32	- -	- -	- -	20.0	35.0	48.0	3.0	- -	- -	- -	- -	9 11.50	− 31.83	3.72	1 8 43.39	41.21
	α Virginis	33	42.8	44.8	46.0	55.8	56.8	58.1	59.4	0.4	10.0	11.2	13.3	17 58.05	+ 0.18	3.72	13 18 1.95	12.67
	Lacaille 5636	34	- -	- -	- -	36.6	37.7	39.1	40.5	41.7	- -	- -	- -	32 39.12	0.11	3.73	13 32 42.96	14.01
	Lacaille 5639	35	- -	53.9	55.5	7.0	8.4	9.8	11.2	12.4	24.0	25.4	- -	33 9.73	0.16	3.73	13 33 13.62	14.03
	* — 37° 33′	†36	52.6	55.3	56.5	8.8	10.2	11.6	12.9	14.4	26.2	27.9	30.6	40 11.55	0.17	3.73	13 40 15.45	14.44
	Lacaille 5724	†37	- -	- -	- -	24.0	25.2	26.8	28.4	29.7	- -	- -	- -	45 26.82	0.11	3.73	13 45 30.66	14.54
	η Bootis	38	52.8	55.1	56.3	6.4	7.5	8.7	9.9	11.0	21.2	22.5	24.6	48 8.73	0.23	3.73	13 48 12.69	11.64
	B. A. C. 4667	39	44.2	46.6	48.2	0.8	2.1	3.7	5.2	6.7	18.8	20.4	22.9	53 3.60	0.17	3.74	13 53 7.51	14.87
	* — 37° 51′?	40	- -	- -	- -	46.5	47.9	49.3	50.8	52.2	- -	- -	- -	55 49.34	0.11	3.74	13 55 53.19	14.73
	* — 37° 36′?	41	24.0	26.8	28.3	40.5	41.9	43.3	44.8	46.0	58.0	59.7	2.1	56 43.22	0.17	3.74	13 56 47.13	14.75
	Lacaille 5842	42	6.5	8.8	10.2	21.0	22.3	23.7	25.0	26.3	37.1	38.6	40.8	3 23.66	0.17	3.74	14 3 27.57	14.15
	Lacaille 5860	43	- -	- -	- -	13.3	14.5	16.3	17.9	19.2	- -	- -	- -	6 16.24	0.11	3.74	14 6 20.09	15.29
	Lacaille 5878	†44	- -	- -	- -	18.3	19.8	21.6	23.0	24.3	- -	- -	- -	9 21.40	0.11	3.74	14 9 25.25	15.44
	ψ Centauri	45	55.4	58.1	59.5	11.6	12.9	14.4	15.8	17.2	29.1	30.7	33.1	12 14.35	0.17	3.74	14 12 18.26	14.99
	Lacaille 5922	46	38.1	40.3	41.7	52.8	54.0	55.4	56.6	57.9	8.7	10.1	12.3	15 55.26	0.17	3.74	14 15 59.17	14.31
	Lacaille 5926	47	- -	21.7	23.0	34.1	35.1	36.7	38.1	39.3	50.0	51.6	- -	16 36.62	0.16	3.74	14 16 40.52	14.32
	ρ Bootis	48	37.0	39.3	40.6	52.0	53.2	54.6	56.0	57.2	8.2	- -	11.9	25 53.00	1.80	3.75	14 25 58.55	10.82
	5 Ursæ Minoris	49	47.0	55.8	0.8	41.5	45.9	51.0	56.1	0.2	40.2	45.6	53.9	27 50.73	1.20	3.75	14 27 55.68	3.44
	B. A. C. 4842	50	9.0	11.6	13.1	25.1	26.5	28.0	29.4	30.8	42.6	44.3	46.8	33 27.93	0.17	3.75	14 33 31.85	15.32
	Lacaille 6086	51	11.6	14.1	15.6	27.8	29.0	30.7	32.0	33.3	45.4	46.9	49.3	38 30.52	0.17	3.75	14 38 34.44	15.45
	α Libræ	52	2.3	4.4	5.7	15.7	16.8	18.0	19.3	20.4	30.1	31.4	33.5	43 17.96	+ 0.17	3.75	14 43 21.88	13.54
	Lacaille 6135	53	43.7	46.2	47.6	- -	- -	- -	37.6	40.4	41.8	43.1	44.9	46 20.66	− 18.72	2.75	14 46 5.69	15.11
	ψ Bootis	54	16.6	19.0	20.2	31.2	32.3	33.5	35.0	36.0	46.9	48.3	50.5	58 33.59	+ 0.27	3.76	14 58 37.62	10.83
	Polaris	55	- -	- -	- -	2.0	- -	32.0	21.0	59.0	- -	- -	- -	8 43.50	− 2.31	+ 4.00	1 8 45.19	− 41.55

19. Faint.
26. Saw the comet, which was, however, too faint for observation.
27. Sky hazy; star faint.
36. Very faint.
37. Very faint.
44. Very faint and uncertain.

May 19, 15h. 50m. Image east $\overset{r.}{0.20}$. Clamp west.
Image west 0.27. Clamp east.

May 20. n. = $+\overset{s.}{0.095}$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 20, 12.0	+ 3.70	+ 0.019	+ 0.192

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. May 21	Sun I	1	13.2	15.0	16.4	- -	- -	- -	- -	- -	41.5	43.0	45.0	50 29.02	+ 0.29	+ 4.07	3 50 33.38	- -
	Sun II	†2	- -	- -	- -	56.9	58.0	0.1	16.3	18.5	19.6	21.2	22.6	53 11.65	— 27.18	4.07	3 52 48.54	- -
	α Canis Majoris	3	- -	- -	- -	- -	- -	- -	- -	36.3	37.7	38.8	40.5	40 38.32	— 35.29	4.17	6 40 7.20	— 8.64
N.	θ Virginis	4	35.0	37.1	38.3	47.9	49.0	50.2	51.4	52.3	1.8	3.1	5.0	2 50.10	+ 0.19	4.38	13 2 54.67	12.37
	Polaris, S. P.	5	- -	- -	- -	18.0	37.0	47.0	0.0	18.0	- -	- -	- -	9 48.00	— 7.93	4.39	1 9 44.46	41.99
	Lacaille 5510	†6	- -	- -	- -	54.8	56.1	57.5	58.9	0.0	- -	- -	- -	14 57.46	+ 0.14	4.39	13 15 1.99	13.24
	A Cassiopeæ, S. P.	†7	- -	- -	- -	8.8	5.7	2.6	59.0	56.2	- -	- -	- -	21 2.46	— 0.54	4.39	1 21 6.31	13.72
	Lacaille 5580	8	40.6	42.9	44.1	55.1	56.3	57.5	59.0	0.3	11.0	12.2	14.4	24 57.58	+ 0.19	4.39	13 25 2.16	13.53
	ζ Virginis	9	26.4	28.4	29.5	39.3	40.4	41.4	42.6	43.7	53.2	54.4	56.4	27 41.43	0.19	4.40	13 27 46.02	12.27
	Lacaille 5639	†10	51.5	53.5	54.8	6.6	7.8	9.2	10.6	11.8	23.4	24.6	26.9	33 9.15	0.20	4.40	13 33 13.75	14.03
	η Bootis	11	52.2	54.3	55.5	5.8	7.0	8.2	9.4	10.4	20.6	21.8	23.9	48 8.10	0.22	4.41	13 48 12.73	11.62
	α Draconis	12	3.8	8.4	11.3	34.1	36.7	39.4	42.2	44.6	6.9	10.0	14.6	0 39.27	0.51	4.41	14 0 44.19	8.19
	Lacaille 5855	13	- -	- -	- -	36.6	37.7	39.0	40.2	41.4	- -	- -	- -	4 38.98	0.14	4.42	14 4 43.54	13.78
	α Bootis	14	7.3	9.4	10.7	20.9	22.0	23.4	24.6	25.6	35.8	37.0	39.0	9 23.25	0.22	4.42	14 9 27.89	11.25
	Ψ Centauri	15	54.8	57.3	58.7	10.8	12.2	13.7	15.0	16.4	28.4	29.9	32.5	12 13.61	0.21	4.42	14 12 18.24	14.99
	B. A. C. 4767	16	42.7	45.0	46.2	56.7	57.9	59.1	0.4	1.6	12.1	13.4	15.5	16 59.15	0.19	4.42	14 17 3.76	13.95
	5 Ursæ Minoris	17	45.7	55.4	0.4	41.1	45.5	50.5	55.6	59.6	39.5	45.4	53.4	27 50.19	0.47	4.43	14 27 55.09	3.40
	B. A. C. 4842	18	8.3	11.1	12.5	24.5	25.7	27.2	28.7	29.9	41.9	43.5	46.0	33 27.21	0.21	4.43	14 33 31.85	15.33
	Lacaille 6086	19	11.0	13.7	14.9	27.1	28.5	29.9	31.6	33.0	44.6	46.3	48.7	38 29.94	+ 0.21	4.43	14 38 34.58	15.46
	α Libræ	20	- -	- -	- -	15.0	16.0	17.3	18.5	19.6	29.4	30.8	32.7	43 22.41	— 4.98	4.44	14 43 21.87	13.54
	Lacaille 6152	†21	46.8	49.5	50.8	- -	- -	- -	- -	- -	18.8	20.5	23.0	48 4.90	+ 0.25	4.44	14 48 9.59	15.19
	β Ursæ Minoris	22	- -	- -	- -	59.1	3.1	7.7	12.2	15.7	- -	- -	- -	51 7.56	0.66	4.44	14 51 12.66	3.14
	Ψ Bootis	23	16.0	18.3	19.6	30.5	31.8	33.0	34.3	35.5	46.3	47.6	49.7	58 32.96	0.24	4.45	14 58 37.65	10.83
22	Sun II	24	27.6	29.8	31.2	41.3	42.4	43.7	45.0	46.2	56.2	57.5	59.6	56 43.68	+ 0.25	5.12	3 56 49.05	67.69
	β Orionis	†25	- -	- -	- -	50.4	51.4	52.7	53.9	54.8	4.7	5.7	7.7	7 57.66	— 4.85	5.18	5 7 57.99	9.30
	α Canis Majoris	26	46.3	48.5	49.5	59.7	0.7	1.9	3.1	4.2	14.1	15.4	17.4	39 1.89	+ 0.18	5.25	6 39 7.32	— 8.63
Y.	Venus I	†27	9.5	11.8	13.2	23.9	25.1	26.5	27.8	28.8	39.3	40.6	42.9	40 26.31	0.26	5.25	6 40 31.82	+ 0.51
	α Canis Minoris	28	48.5	50.5	51.6	1.4	2.5	3.7	4.9	6.0	15.4	16.7	18.6	32 3.62	0.20	5.30	7 32 9.12	— 10.74
	β Geminorum	29	34.6	37.0	38.3	49.3	50.5	51.8	53.2	54.3	5.0	6.4	8.8	36 51.75	0.28	5.30	7 36 57.33	12.59
	Moon I	†30	24.0	26.2	27.6	37.8	38.9	40.0	41.3	42.3	52.4	53.8	55.8	56 40.01	+ 0.23	5.32	7 56 45.56	- -
	Rumker 4124	31	- -	- -	- -	- -	- -	- -	39.9	42.3	43.5	44.7	46.1	40 43.30	— 34.03	5.55	12 40 14.82	11.87
	28 Comæ	32	4.1	6.2	7.4	17.2	18.4	19.7	20.9	21.9	31.7	33.0	35.0	41 19.59	+ 0.21	5.55	12 41 25.35	11.87
	Ψ Virginis	33	56.0	57.9	59.1	9.0	10.0	11.1	12.3	13.3	23.0	24.3	26.3	47 11.12	0.19	5.56	12 47 16.87	12.37
	Lacaille 5348	34	11.9	14.2	15.4	26.6	27.8	29.2	30.4	31.6	42.4	43.8	46.0	51 29.03	0.20	5.56	12 51 34.79	13.06
	Lacaille 5368	35	39.4	41.8	43.1	54.1	55.3	56.7	58.0	59.3	10.1	11.4	13.7	54 56.63	0.20	5.57	12 55 2.40	13.09
	θ Virginis	36	33.7	35.9	37.0	46.6	47.8	49.0	50.0	51.0	0.6	1.8	3.8	2 48.84	+ 0.20	5.57	13 2 54.61	12.36
	Polaris, S. P.	†37	- -	- -	- -	55.0	33.5	47.0	- -	- -	- -	5.5	46.5	10 25.50	— 1 45.88	5.58	1 8 45.20	42.51
	Jupiter I	38	2.4	4.5	5.8	15.5	16.5	17.6	18.9	19.9	29.3	30.5	32.5	9 17.54	+ 0.19	5.58	13 9 23.31	- -
	Jupiter II	39	43.8	45.1	46.5	47.7	50.0	- -	50.3	52.7	53.9	55.0	56.5	9 20.15	0.44	5.58	13 9 26.17	- -
	Lacaille 5573	40	37.7	40.0	41.2	52.3	53.4	54.8	56.0	57.2	7.9	9.3	11.5	23 54.66	0.20	5.59	13 24 0.45	13.48
	ζ Virginis	41	25.0	27.2	28.4	38.1	39.1	40.3	41.4	42.4	52.0	53.1	55.2	27 40.20	0.20	5.59	13 27 45.99	12.27
	B. A. C. 4548	42	41.3	43.6	44.9	56.0	57.1	58.6	59.8	1.0	11.8	13.3	15.5	30 58.45	+ 0.20	5.60	13 31 4.25	13.67
	Lacaille 5635	43	- -	- -	- -	25.0	26.3	27.5	28.8	30.0	40.6	42.0	44.3	32 33.06	— 5.39	5.60	13 32 33.27	13.35
	B. A. C. 4581	44	39.5	41.8	43.1	53.6	55.0	56.2	57.6	58.7	9.3	10.6	12.8	37 56.20	+ 0.20	5.60	13 38 2.00	13.56
	B. Z. 413, 17	45	7.1	9.5	10.8	22.3	23.5	24.9	26.2	27.5	38.7	40.2	42.4	42 24.83	0.26	5.61	13 42 30.70	11.11
	B. Z. 412, 137	46	26.5	28.7	30.1	40.4	41.7	42.8	44.3	45.4	55.5	57.0	59.0	45 42.85	0.24	5.61	13 45 48.70	11.42
	B. Z. 412, 139	47	6.7	9.0	10.2	20.7	21.8	23.3	24.6	25.5	36.0	37.5	39.5	46 23.16	0.24	5.61	13 46 29.01	11.42
	Rumker 4517	48	- -	- -	- -	8.8	10.0	11.2	12.4	13.3	- -	- -	- -	49 11.14	0.16	5.62	13 49 16.91	11.79
	Rumker 4551	49	20.3	22.5	23.7	34.1	35.2	36.6	37.8	39.0	49.1	50.5	52.8	54 36.51	0.23	5.62	13 54 42.36	11.47
	Weisse 1035	50	59.6	1.7	2.9	12.9	14.0	15.2	16.4	17.4	27.2	28.5	30.5	59 15.12	0.19	5.62	13 59 20.93	13.12
	κ Virginis	51	17.8	19.8	21.0	30.8	32.0	33.2	34.3	35.3	45.0	46.3	48.3	5 33.07	0.19	5.62	14 5 38.88	12.95
	α Bootis	†52	6.0	8.2	9.5	19.7	20.8	22.0	23.4	24.4	34.5	35.8	37.9	9 22.02	0.22	5.63	14 9 27.87	11.25
	2 Libræ	53	45.9	48.0	49.2	58.9	59.9	1.2	2.5	3.5	13.0	14.4	16.3	16 1.16	0.19	5.63	14 16 6.98	13.10
	θ Bootis	54	4.4	7.7	9.7	25.3	27.1	29.1	31.3	32.8	48.3	50.4	53.8	20 29.08	0.37	5.64	14 20 35.09	9.29
	ρ Bootis	55	35.2	37.5	38.9	50.1	51.4	52.7	54.1	55.2	6.2	7.8	10.1	25 52.65	+ 0.25	+ 5.64	14 25 58.54	— 10.81

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 21, 13.0	+ 4.38	+ 0.034	+ 0.194
22, 12.4	+ 5.54	+ 0.050	+ 0.196

2. Passing clouds; the observation not entirely reliable.
6. Faint and uncertain.
7. Faint.
10. Very faint.
21. Faint and uncertain.
25. Faint
27. Very steady.
30. Faint.
37. Unsteady.
52. Unsteady.

			s.
May 21,	3h. to 7h.	n. =	+ 0.130.
	13h. to 15h.		0.050.
22,	3h. to 9h.		0.100.
	12h. to 17h.		+ 0.045.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 22	σ Bootis	1	22.6	25.0	26.4	37.6	38.9	40.2	41.5	42.7	53.7	55.1	57.4	28 40.10	+ 0.25	+ 5.64	14 28 45.99	− 10.86
	μ Virginis	2	33.1	35.1	36.3	45.9	46.9	48.2	49.3	50.3	59.9	1.2	3.2	35 48.13	0.19	5.65	14 35 53.97	12.85
	μ Libræ	3	30.8	32.9	33.9	44.0	45.2	46.5	47.7	48.7	58.5	59.6	1.6	41 46.31	0.19	5.65	14 41 52.15	13.42
Y.	Weisse 793 . .	4	52.4	54.5	55.7	5.6	6.7	8.1	9.1	10.2	19.9	21.1	23.1	43 7.85	0.19	5.66	14 43 13.70	13.28
	ξ² Libræ	5	2.7	4.8	5.9	15.7	16.9	18.0	19.2	20.2	30.0	31.2	33.0	49 17.96	0.19	5.66	14 49 23.81	13.27
	2 Serpentis . . .	6	30.7	32.7	33.7	43.5	44.7	45.7	46.9	48.0	57.3	58.6	0.5	54 45.66	0.20	5.67	14 54 51.53	12.62
	Σ.C.Gen. 1683, 1st *	7	39.3	40.4	41.8	43.1	45.5	. .	. .	. .	. .	. .	. .	56 42.02	34.04	5.67	14 57 21.73	12.22
	Σ. C. Gen. 1863, 2d*	8	1.0	2.9	4.1	. .	. .	. .	. .	. .	. .	. .	. .	57 2.67	13.57	5.67	14 57 21.91	12.22
	β Libræ	9	20.7	23.0	24.2	33.7	34.8	36.0	37.2	38.1	47.8	49.2	51.1	9 35.98	0.19	5.68	15 9 41.85	13.22
	28 Libræ	10	49.9	52.2	53.4	3.3	4.4	5.6	6.9	8.0	18.0	19.3	21.4	13 5.67	+ 0.19	5.68	15 13 11.54	13.91
	B. A. C. 1061, S. P.	†11	. .	. .	. .	23.0	6.0	48.0	30.5	16.0	. .	. .	. .	21 48.70	− 2.91	5.91	3 21 51.70	51.39
	ε Serpentis . . .	12	41.7	43.6	44.9	54.7	55.7	56.8	58.1	59.0	8.5	9.9	11.7	43 56.78	+ 0.20	5.71	15 44 2.69	12.30
	χ Herculis . . .	13	32.9	35.8	37.4	50.5	51.8	53.5	55.2	56.6	9.5	11.2	14.0	47 53.49	0.31	5.71	15 47 59.51	9.18
	δ Scorpii	14	55.8	58.1	59.4	9.9	10.9	12.3	13.5	14.6	24.9	26.2	28.2	52 12.16	0.19	5.71	15 52 18.06	14.54
	B. A. C. 5317 . .	15	22.8	25.1	26.4	37.0	38.1	39.4	40.8	41.9	52.3	53.7	55.9	55 39.40	0.20	5.72	15 55 45.32	14.77
	B. A. C. 5335 . .	16	. .	. .	. .	52.1	53.2	54.6	55.8	56.9	. .	. .	. .	57 54.52	0.14	5.72	15 58 0.38	14.67
	B. A. C. 5354 . .	17	14.7	16.7	18.1	28.6	29.8	31.1	32.3	33.5	43.7	45.3	47.4	0 31.02	0.19	5.72	16 0 36.93	14.69
	B. A. C. 5378 . .	18	51.9	54.0	55.3	6.3	7.5	8.6	10.0	11.2	21.7	23.2	25.3	3 8.64	0.20	5.72	16 3 14.56	15.07
	B. A. C. 5394 . .	19	13.0	15.3	16.6	27.0	28.2	29.4	30.8	32.0	42.4	43.8	45.9	5 29.49	0.20	5.72	16 5 35.41	14.78
	B. A. C. 5418 . .	20	54.4	56.5	57.9	8.4	9.7	10.7	12.3	13.4	23.7	25.0	27.1	8 10.83	0.20	5.73	16 8 16.76	14.78
	α Scorpii	21	42.0	44.4	45.7	56.4	57.6	58.8	0.3	. .	. .	. .	. .	20 52.17	6.86	5.74	16 21 4.77	15.06
	ζ Ophiuchi . . .	22	19.7	21.7	22.8	32.6	33.6	34.8	36.1	37.0	46.5	47.8	50.0	29 34.78	0.19	5.74	16 29 40.71	13.54
23	Sun II	23	27.8	29.9	31.3	41.5	42.6	43.8	45.0	46.2	56.4	57.7	59.8	0 43.82	0.24	6.15	4 0 50.21	67.76
	α Canis Majoris . .	24	45.2	47.4	48.6	58.7	59.7	1.0	2.2	3.2	13.1	14.5	16.5	39 0.92	0.18	6.27	6 39 7.37	− 8.63
	Venus I	25	16.4	18.7	19.9	30.6	31.8	33.1	34.4	35.5	46.2	47.3	49.7	45 33.05	0.25	6.29	6 45 39.59	+ 0.55
	α Canis Minoris . .	26	47.6	49.6	50.7	0.4	1.5	2.6	3.8	4.8	14.4	15.7	17.7	32 2.62	0.21	6.31	7 32 9.14	− 10.73
	β Geminorum . . .	27	33.6	35.9	37.3	48.2	49.4	50.7	52.2	53.2	4.0	5.5	7.6	36 50.69	0.27	6.31	7 36 57.27	12.58
	Moon I	28	55.8	57.9	59.3	9.2	10.4	11.6	12.9	14.0	23.8	25.1	27.1	45 11.55	0.23	6.37	8 45 18.15	. .
	* + 14° 28′ . .	29	. .	. .	. .	5.8	6.9	8.1	9.2	10.5	. .	. .	. .	40 8.10	0.16	6.54	12 40 14.80	11.06
	29 Comæ	30	43.0	45.0	46.1	56.1	57.2	58.4	59.7	0.7	10.5	11.8	14.0	41 58.41	0.21	6.54	12 42 5.16	11.85
	Ψ Virginis	31	54.9	57.0	58.2	8.0	9.0	10.3	11.4	12.4	22.0	23.4	25.3	47 10.17	0.19	6.55	12 47 16.91	12.36
	B. A. C. 4345 . .	32	44.6	46.4	48.0	49.6	52.6	. .	10.0	13.0	14.6	16.0	17.9	49 31.27	0.59	6.55	12 49 38.41	11.26
	α Can. Venat. . .	33	13.4	16.0	17.5	30.1	31.5	32.9	34.4	35.7	47.9	49.6	52.0	49 32.82	0.27	6.55	12 49 39.64	11.26
	78 Ursæ Majoris . .	34	18.6	22.7	24.9	42.4	44.5	46.7	48.9	50.8	8.1	10.6	14.1	54 46.57	0.39	6.55	12 54 53.51	10.71
	θ Virginis	35	32.8	34.8	36.0	45.6	46.8	47.9	49.1	50.1	59.5	0.9	2.8	2 47.85	+ 0.20	6.56	13 2 54.61	12.36
	Polaris, S. P. . .	36	55.0	34.0	45.0	. .	. .	. .	. .	. .	55.0	4.0	45.0	8 49.67	− 10.34	6.56	1 8 45.89	43.13
	Jupiter I . . .	37	25.3	26.5	27.9	29.1	31.5	. .	31.8	34.3	35.4	36.5	38.0	9 1.63	+ 0.45	6.56	13 9 8.64	. .
	Jupiter II . . .	38	49.6	51.7	52.7	2.5	3.5	4.7	5.9	6.9	16.5	17.7	19.6	9 4.66	0.20	6.56	13 9 11.42	. .
	B. A. C. 4496 . .	39	56.3	58.4	59.6	9.3	10.3	11.5	12.6	13.6	23.2	24.4	26.4	21 11.42	+ 0.20	6.57	13 21 18.19	12.31
	Weisse 365 . . .	40	. .	. .	. .	16.1	17.3	19.4	34.4	36.8	38.0	39.0	40.4	23 30.18	− 25.72	6.57	13 23 11.03	12.05
	ζ Virginis	41	24.2	26.3	27.4	37.2	38.1	39.3	40.4	41.5	50.9	52.3	54.1	27 39.25	+ 0.20	6.58	13 27 46.03	12.26
	84 Virginis	42	51.9	54.0	55.1	4.7	5.9	7.1	8.2	9.2	18.8	20.0	22.0	36 6.99	0.20	6.59	13 36 13.78	12.20
	3 Bootis	43	1.0	3.2	4.6	15.3	16.6	17.8	19.1	20.3	30.9	32.2	34.5	40 17.77	0.23	6.59	13 40 24.59	11.35
	89 Virginis	44	. .	. .	. .	20.3	21.4	22.6	23.9	24.9	. .	. .	. .	42 22.62	0.15	6.59	13 42 29.36	13.18
	i Draconis . .	45	54.7	57.9	0.9	3.9	9.4	. .	33.8	39.3	42.3	45.0	48.3	47 22.08	0.53	6.59	13 47 29.20	8.51
		†46	46.0	50.8	53.7	16.8	19.3	22.3	25.0	27.5	50.1	53.4	58.0					
	τ Virginis	47	21.9	23.9	25.0	34.8	35.9	37.0	38.2	39.2	48.6	49.8	51.9	54 36.93	0.20	6.60	13 54 43.73	12.35
	α Draconis . .	48	10.6	14.0	16.7	19.6	25.4	. .	47.9	53.0	56.0	58.8	2.4	0 37.10	0.52	6.60	14 0 44.22	8.15
		49	1.3	6.3	9.2	31.9	34.4	37.2	40.0	42.7	4.7	7.8	12.6					
	d Bootis	50	48.5	50.6	52.0	2.7	3.9	5.2	6.6	7.7	18.2	19.8	21.9	4 5.19	0.23	6.61	14 4 12.03	11.25
	λ Virginis	51	23.3	25.4	26.6	36.5	37.5	38.8	40.0	41.0	50.5	51.9	53.9	11 38.67	0.20	6.61	14 11 45.48	13.17
	2 Libræ	52	44.8	46.9	48.0	58.0	59.0	0.2	1.3	2.5	12.2	13.4	15.4	16 0.15	0.20	6.61	14 16 6.96	13.10
	Schwerdt 835 . .	53	. .	. .	. .	36.6	42.9	49.2	56.8	2.4	. .	. .	. .	18 49.58	0.98	6.62	14 18 57.18	0.90
	ρ Bootis	54	34.1	36.5	37.8	49.1	50.3	51.7	53.2	54.3	5.4	6.8	9.2	25 51.67	0.24	6.62	14 25 58.53	10.84
	σ Bootis	55	21.6	24.0	25.5	36.6	37.8	39.0	40.4	41.6	52.7	54.3	56.6	28 39.10	+ 0.24	+ 6.62	14 28 45.96	− 10.86

11. Corrected for difference between clock and chronograph = + 0.22.
18. Reduced from 11 wires.

May 23. 4h. to 9h. n. = + 0.080 s.
12h. to 16h. + 0.020.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 23, 12.4	+ 6.53	+ 0.045	+ 0.198

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. May 23	Lalande F, 2523 .	1	59. 9	11. 5	18. 4	15. 5	21. 8	28. 5	36. 0	41. 5	38. 4	45. 1	56. 7	37 28. 48	+ 1. 29	+ 6. 63	14 37 36. 40	+ 0. 89
	Lalande F, 2537 .	2	38. 6	50. 8	57. 3	55. 4	1. 7	8. 4	16. 3	22. 1	18. 1	26. 2	37. 3	43 8. 38	1. 31	6. 63	14 43 16. 32	— 1. 49
	ξ^2 Libræ	3	1. 8	4. 0	5. 0	14. 9	15. 9	17. 0	18. 3	19. 2	28. 9	30. 0	32. 1	49 17. 01	0. 20	6. 64	14 49 23. 85	13. 28
Y.	2 Serpentis . . .	4	29. 7	31. 7	32. 7	42. 5	43. 6	44. 7	45. 9	46. 8	56. 4	57. 7	59. 6	54 44. 66	0. 20	6. 64	14 54 51. 50	12. 57
	ψ Bootis	5	14. 0	16. 2	17. 6	28. 2	29. 4	30. 8	32. 2	33. 3	44. 0	45. 4	47. 7	58 30. 80	0. 23	6. 65	14 58 37. 68	10. 83
	b Bootis	6	8. 4	10. 6	11. 9	22. 9	24. 0	25. 3	26. 6	27. 7	38. 4	39. 8	42. 0	2 25. 24	0. 23	6. 65	15 2 32. 12	10. 89
	3 Serpentis . . .	7	4. 3	6. 3	7. 5	17. 1	18. 1	19. 4	20. 6	21. 6	31. 1	32. 3	34. 3	8 19. 33	0. 20	6. 65	15 8 26. 18	12. 26
	β Libræ	8	19. 8	21. 9	23. 0	32. 7	33. 8	35. 0	36. 2	37. 1	46. 8	48. 1	50. 0	9 34. 95	0. 20	6. 65	15 9 41. 80	13. 22
	28 Libræ	9	49. 0	51. 2	52. 2	2. 4	3. 6	4. 8	6. 1	7. 0	17. 2	18. 3	20. 4	13 4. 75	0. 20	6. 66	15 13 11. 61	13. 92
	μ Bootis	10	56. 0	58. 4	0. 0	12. 3	13. 6	15. 0	16. 6	17. 8	29. 8	31. 3	34. 0	19 14. 98	0. 27	6. 66	15 19 21. 91	9. 89
	Radcliffe 3378 . .	11	30. 1	32. 0	33. 5	35. 0	38. 2	. .	54. 4	57. 2	58. 7	0. 2	2. 0	19 16. 13	0. 58	6. 66	15 19 23. 37	9. 92
	10 Serpentis . . .	†12	24. 5	26. 7	27. 8	37. 5	38. 5	39. 6	41. 0	41. 9	51. 2	52. 5	54. 6	21 39. 62	0. 20	6. 66	15 21 46. 48	12. 48
	γ Libræ	13	33. 1	35. 3	36. 5	46. 4	47. 5	48. 7	49. 8	50. 9	0. 9	2. 0	4. 2	27 48. 66	0. 20	6. 67	15 27 55. 53	13. 73
	42 Libræ	14	51. 8	54. 1	55. 3	6. 0	7. 1	8. 2	9. 7	10. 7	21. 0	22. 4	24. 4	32 8. 25	0. 21	6. 67	15 32 15. 13	14. 54
	a Serpentis . . .	15	12. 7	14. 7	15. 8	25. 5	26. 6	27. 7	28. 9	30. 0	39. 6	40. 9	42. 8	37 27. 75	0. 20	6. 67	15 37 34. 62	12. 20
27	Moon I	16	11. 2	13. 4	14. 5	24. 5	25. 5	26. 8	28. 0	29. 0	38. 7	40. 1	42. 2	56 26. 72	+ 0. 20	10. 52	11 56 37. 44	. .
N.	ε Corvi	17	. .	. .	. .	54. 7	55. 9	57. 2	58. 4	59. 5	9. 8	11. 1	13. 3	3 2. 49	— 5. 17	10. 52	12 3 7. 84	12. 08
	Lacaille 5159 . .	18	50. 9	53. 4	54. 6	5. 5	6. 6	7. 8	9. 4	10. 5	21. 2	22. 6	24. 8	20 7. 94	+ 0. 20	10. 53	12 20 18. 67	12. 44
	Lacaille 5188 . .	19	. .	. .	. .	44. 1	45. 4	46. 9	48. 2	49. 4	. .	. .	. .	23 46. 80	0. 15	10. 54	12 23 57. 49	12. 58
	q Virginis	20	19. 5	21. 7	22. 7	32. 6	33. 6	34. 8	36. 0	37. 1	46. 5	47. 9	50. 0	26 34. 76	0. 20	10. 54	12 26 45. 20	12. 16
	χ Virginis	21	. .	. .	. .	0. 7	1. 6	2. 8	4. 1	5. 1	. .	. .	. .	32 2. 86	0. 15	10. 54	12 32 13. 55	12. 18
	Lacaille 5256 . .	22	33. 5	35. 8	37. 0	47. 5	48. 7	50. 1	51. 5	52. 5	2. 8	4. 2	6. 4	35 50. 00	+ 0. 20	10. 55	12 36 0. 75	12. 61
	B. A. C. 4313 . .	23	. .	. .	. .	32. 6	34. 3	36. 7	56. 1	59. 0	0. 4	2. 0	3. 7	44 50. 60	— 32. 77	10. 55	12 44 28. 38	13. 30
	a Can. Venat. . .	24	9. 5	12. 0	13. 5	25. 8	27. 1	28. 8	30. 4	31. 7	43. 8	45. 7	48. 0	49 28. 75	+ 0. 31	10. 56	12 49 39. 62	11. 22
	Lacaille 5382 . .	†25	. .	. .	. .	47. 6	48. 7	50. 0	51. 3	52. 5	. .	. .	. .	56 50. 02	0. 15	10. 56	12 57 0. 73	13. 05
	Lacaille 5387 . .	26	20. 7	23. 2	24. 4	35. 2	36. 5	37. 9	39. 2	40. 3	51. 0	52. 5	54. 6	57 37. 77	+ 0. 20	10. 56	12 57 48. 53	13. 07
	θ Virginis	27	. .	. .	. .	41. 6	42. 7	43. 9	45. 0	46. 0	55. 6	56. 9	58. 9	2 48. 81	— 4. 80	10. 57	13 2 54. 58	12. 21
	Polaris, S. P. . .	†28	. .	. .	. .	19. 0	30. 0:	46. 0:	0. 0:	13. 0:	. .	. .	. .	10 19. 00	— 38. 65	10. 57	1 8 50. 92	45. 70
	Lacaille 5502 . .	29	42. 0	44. 5	46. 2	58. 4	59. 7	1. 3	2. 8	4. 0	16. 0	17. 7	20. 2	14 1. 16	+ 0. 21	10. 58	13 14 11. 95	13. 92
	Lacaille 5573 . .	30	32. 8	35. 0	36. 4	47. 2	48. 5	49. 7	51. 0	52. 2	2. 8	4. 4	6. 5	23 49. 68	0. 20	10. 58	13 24 0. 46	13. 46
	ζ Virginis	31	20. 2	22. 1	23. 4	33. 0	34. 0	35. 2	36. 3	37. 4	46. 8	48. 2	50. 2	27 35. 16	0. 21	10. 59	13 27 45. 96	12. 25
	Lacaille 5613 . .	32	. .	. .	. .	33. 7	35. 0	36. 4	38. 0	39. 2	. .	. .	. .	29 36. 46	0. 15	10. 59	13 29 47. 20	13. 98
	Lacaille 5615 . .	33	. .	. .	. .	47. 6	48. 9	50. 2	51. 7	52. 8	. .	. .	. .	29 50. 24	0. 15	10. 59	13 30 0. 98	13. 98
	Lacaille 5649 . .	†34	4. 2	6. 7	8. 1	19. 6	20. 8	22. 2	23. 7	25. 0	36. 0	37. 7	40. 1	34 22. 19	0. 21	10. 59	13 34 32. 99	13. 99
	B. A. C. 4581 . .	35	34. 7	36. 9	38. 3	49. 0	50. 1	51. 5	52. 7	53. 8	4. 3	5. 7	8. 0	37 51. 36	0. 20	10. 59	13 38 2. 15	13. 55
	η Ursæ Majoris . .	36	36. 9	40. 1	41. 7	56. 8	58. 4	0. 1	2. 0	3. 4	18. 4	20. 5	23. 5	42 0. 16	0. 39	10. 60	13 42 11. 15	10. 05
	Lacaille 5754 . .	37	38. 7	41. 1	42. 4	53. 6	54. 9	56. 2	57. 6	58. 7	9. 7	11. 1	13. 2	47 56. 20	0. 20	10. 60	13 48 7. 00	13. 98
	τ Virginis	38	17. 8	20. 0	21. 1	30. 7	31. 8	33. 1	34. 4	35. 4	44. 8	46. 0	47. 8	54 32. 99	0. 21	10. 61	13 54 43. 81	12. 34
	Polaris	39	. .	. .	. .	58. 0	43. 0	32. 0	21. 0	59. 0	. .	. .	. .	8 30. 60	8. 86	11. 14	1 8 50. 60	46. 06
	θ Ceti	40	45. 4	47. 3	48. 4	58. 2	59. 3	0. 5	1. 7	2. 7	12. 4	13. 6	15. 6	17 0. 46	0. 20	11. 15	1 17 11. 81	10. 17
	β Arietis	41	38. 5	40. 6	42. 0	52. 2	53. 4	54. 7	56. 0	57. 0	6. 9	8. 4	10. 5	46 54. 56	+ 0. 24	11. 17	1 47 5. 97	— 11. 21
28	Sun I	42	. .	. .	. .	. .	. .	. .	7. 7	10. 0	11. 5	12. 6	14. 3	19 11. 22	— 35. 44	11. 30	4 18 47. 08	. .
	Sun II	†43	35. 5	37. 7	38. 9	49. 3	50. 4	51. 8	53. 2	54. 2	4. 2	5. 7	7. 9	20 51. 71	+ 0. 28	11. 30	4 21 3. 29	. .
	a Aurigæ	44	. .	. .	. .	. .	. .	. .	6. 8	10. 0	11. 7	13. 5	15. 4	7 11. 48	— 47. 15	11. 34	5 6 35. 67	— 14. 52
	Mercury I . . .	45	15. 0	17. 4	18. 8	29. 4	30. 6	31. 9	33. 0	34. 3	44. 5	46. 0	. .	42 30. 09	+ 1. 93	11. 37	5 42 43. 39	+ 0. 37
	a Orionis	46	19. 5	21. 7	22. 9	32. 5	33. 6	34. 7	36. 0	36. 9	46. 6	47. 8	49. 8	47 34. 73	0. 22	11. 38	5 47 46. 33	— 10. 76
	Venus I	47	35. 6	38. 0	39. 3	. .	. .	. .	. .	. .	5. 2	6. 6	8. 7	10 52. 23	+ 0. 32	11. 45	7 11 4. 00	. .
	Venus II . . .	48	50. 7	51. 8	53. 1	54. 5	55. 6	. .	26. 3	28. 8	30. 0	31. 3	32. 8	11 11. 49	— 18. 05	11. 45	7 11 4. 89	. .
	a^2 Geminorum . . .	49	23. 1	25. 5	27. 0	38. 3	39. 6	40. 9	42. 4	43. 5	54. 6	56. 2	58. 5	25 40. 87	+ 0. 34	11. 46	7 25 52. 67	13. 01
	q Virginis	50	. .	20. 5	21. 6	31. 4	32. 5	33. 6	34. 8	35. 9	45. 5	46. 8	. .	26 33. 62	0. 19	11. 71	12 26 45. 52	12. 15
	χ Virginis	51	46. 5	48. 6	49. 7	59. 4	0. 5	1. 7	2. 9	4. 0	13. 4	14. 8	16. 9	32 1. 65	0. 20	11. 72	12 32 13. 57	12. 17
	B. A. C. 4339 .	52	53. 6	6. 0	19. 0	31. 3	55. 1	. .	46. 1	8. 5	21. 0	31. 6	45. 3	47 51. 76	2. 93	11. 73	12 48 6. 42	6. 07
		†53	23. 9	43. 8	55. 0	. .	. .	. .	. .	. .	47. 8	0. 4	19. 7					
	B. A. C. 4342 .	54	2. 0	14. 3	27. 2	39. 7	3. 4	. .	53. 5	16. 4	28. 2	38. 9	53. 8	47 59. 72	+ 2. 93	+11. 73	12 48 14. 38	— 6. 07
		†55	32. 3	52. 0	2. 9	. .	. .	. .	. .	. .	55. 8	8. 1	27. 2					

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 27, 13. 1	+ 10. 57	+ 0. 046	+ 0. 206

12. Unsteady.
25. Observed 2′ below horizontal wire.
28. Only the last wire retained.
34. Duplex. Distance 8″; angle 265°; observed as one star.
43. Good observation of sun.
53. Reduced from 6 wires.
55. Reduced from 6 wires.

May 23. 16h. Image east $\overset{r.}{0.22}$. Clamp west.

May 27. n. = $+\overset{s.}{0.060}$.

'E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
28	Moon I	1	42. 5	44. 6	45. 9	56. 0	57. 0	58. 2	59. 4	0. 5	10. 4	11. 7	13. 7	47 58. 17	+ 0. 20	+11. 73	12 48 10. 10	. .
	θ Virginis	2	27. 5	29. 6	30. 9	40. 4	41. 5	42. 7	43. 9	45. 0	54. 4	55. 7	57. 7	2 42. 66	0. 20	11. 74	13 2 54. 60	− 12. 33
	Jupiter I . . .	3	. .	. .	. .	50. 1	51. 2	52. 4	53. 4	54. 6	. .	. .	. .	7 52. 34	0. 15	11. 75	13 8 4. 24	. .
	Jupiter II . . .	4	40. 0	42. 0	43. 3	. .	. .	. .	. .	. .	6. 9	8. 2	10. 0	7 55. 07	0. 24	11. 75	13 8 7. 06	. .
	Polaris, S. P. . .	5	. .	33. 5	47. 5	. .	. .	. .	. .	. .	56. 0	5. 5	46. 0	6 49. 70	1 47. 54	11. 75	1 8 48. 99	46. 44
	58 Virginis	6	52. 7	54. 6	55. 9	5. 6	6. 7	8. 0	9. 2	10. 2	19. 8	21. 0	23. 1	10 7. 89	+ 0. 19	11. 75	13 10 19. 83	12. 55
	α Virginis	7	. .	. .	. .	2. 0	3. 2	5. 2	20. 3	22. 7	23. 9	25. 1	26. 6	18 16. 12	− 25. 92	11. 76	13 18 1. 96	12. 63
	B. A. C. 4527 .	8	22. 7	29. 8	36. 5	43. 4	56. 3	. .	21. 3	33. 8	40. 8	46. 5	54. 3	25 39. 91	+ 1. 61	11. 77	13 25 53. 29	5. 41
		9	18. 6	29. 5	35. 8	28. 2	34. 0	40. 4	46. 4	51. 9	43. 1	50. 2	0. 9					
	B. A. C. 4614 .	10	50. 9	57. 9	4. 2	10. 5	22. 5	. .	31. 0	42. 3	48. 8	54. 4	1. 9	41 57. 61	1. 53	11. 78	13 42 10. 92	4. 51
		11	40. 6	51. 0	57. 1	46. 7	51. 6	57. 6	4. 2	8. 9	57. 8	4. 0	14. 2					
	η Bootis	12	44. 8	46. 8	48. 2	58. 3	59. 4	0. 7	2. 0	3. 0	13. 0	14. 4	16. 5	49 0. 65	0. 25	11. 79	13 48 12. 69	11. 58
	τ Virginis	13	16. 8	18. 8	19. 8	29. 6	30. 7	31. 8	33. 1	34. 1	43. 5	44. 7	46. 7	54 31. 79	0. 21	11. 79	13 54 43. 79	12. 34
	α Arietis	14	59. 7	2. 0	3. 2	13. 7	14. 8	16. 1	17. 4	18. 5	28. 8	30. 2	. .	59 14. 44	1. 86	12. 37	1 59 28. 67	11. 46
29	Sun I	15	21. 8	24. 2	25. 4	35. 8	36. 9	38. 3	39. 5	40. 6	50. 9	52. 1	54. 4	22 38. 17	0. 24	12. 51	4 22 50. 92	. .
	Sun II	16	38. 3	40. 4	41. 7	52. 0	53. 3	54. 6	55. 9	56. 9	7. 1	8. 5	10. 7	24 54. 49	0. 24	12. 51	4 25 7. 24	. .
	α Virginis	17	33. 5	35. 5	36. 7	46. 5	47. 6	48. 8	50. 0	51. 0	0. 6	1. 9	3. 9	17 48. 73	0. 21	13. 05	13 18 1. 99	12. 63
	89 Virginis	18	0. 5	2. 5	3. 7	13. 9	15. 0	16. 3	17. 5	18. 7	28. 4	29. 8	31. 8	42 16. 19	0. 21	13. 07	13 42 29. 47	13. 16
	Moon I	19	40. 6	42. 7	44. 0	54. 3	55. 4	56. 6	58. 0	58. 9	9. 0	10. 4	12. 4	42 56. 57	0. 21	13. 07	13 43 9. 85	. .
	η Bootis	20	43. 5	45. 6	46. 9	57. 0	58. 2	59. 5	0. 7	1. 8	11. 8	13. 2	15. 2	47 59. 40	0. 23	13. 08	13 48 12. 71	11. 58
	Lacaille 5860 . .	21	. .	. .	. .	4. 0	5. 2	6. 9	8. 5	9. 8	. .	. .	. .	6 6. 88	0. 19	13. 09	14 6 20. 16	15. 28
	α Bootis	22	58. 5	0. 6	1. 9	12. 1	13. 4	14. 5	15. 8	16. 9	27. 0	28. 4	30. 4	9 14. 50	0. 24	13. 10	14 9 27. 84	11. 22
	λ Virginis	23	16. 9	19. 0	20. 2	30. 1	31. 2	32. 4	33. 6	34. 5	44. 3	45. 6	47. 6	11 32. 31	0. 21	13. 10	14 11 45. 62	13. 10
	B. A. C. 4767 . .	24	34. 0	36. 2	37. 6	48. 2	49. 3	50. 6	51. 9	52. 9	3. 3	4. 7	6. 9	16 50. 51	0. 21	13. 10	14 17 3. 82	13. 95
	Lacaille 5959 . .	25	31. 6	33. 7	35. 0	45. 6	46. 9	48. 2	49. 6	50. 6	1. 0	2. 5	4. 6	21 48. 12	0. 21	13. 11	14 22 1. 46	14. 07
	B. A. C. 4800 . .	26	. .	. .	. .	57. 0	58. 2	59. 4	0. 8	1. 9	. .	. .	. .	22 59. 46	0. 16	13. 11	14 23 12. 73	14. 06
	5 Ursæ Minoris .	27	7. 0	12. 7	18. 2	23. 1	33. 3	. .	47. 0	56. 8	1. 9	6. 9	12. 7	27 41. 06	1. 03	13. 12	14 27 55. 21	3. 10
		†28	37. 6	46. 3	51. 1	31. 8	36. 1	41. 3	46. 4	50. 5	30. 6	36. 0	44. 0					
	B. A. C. 4857 . .	29	. .	. .	. .	13. 0	14. 2	15. 5	16. 7	17. 9	. .	. .	. .	36 15. 46	0. 16	13. 12	14 36 28. 74	14. 15
	54 Hydræ	†30	38. 7	41. 0	42. 2	. .	. .	. .	. .	. .	8. 2	9. 6	11. 7	37 55. 23	0. 25	13. 13	14 38 8. 61	14. 24
	57 Hydræ	31	31. 0	33. 2	34. 5	45. 2	46. 4	47. 8	49. 1	50. 3	0. 8	2. 2	4. 4	39 47. 76	0. 22	13. 13	14 40 1. 11	14. 36
	Lacaille 6118 . .	32	22. 4	24. 6	26. 0	36. 9	48. 0	49. 4	50. 7	51. 9	52. 7	54. 1	56. 2	42 49. 35	0. 22	13. 13	14 43 2. 70	14. 54
	Lacaille 6134 . .	33	. .	15. 8	17. 1	28. 0	29. 2	30. 6	31. 9	33. 0	43. 7	45. 1	. .	45 30. 49	0. 21	13. 13	14 45 43. 83	14. 58
	B. A. C. 4911 . .	34	47. 9	50. 2	51. 6	2. 4	3. 6	4. 9	6. 3	7. 5	18. 1	19. 6	21. 8	46 4. 90	0. 22	13. 13	14 46 18. 25	14. 58
	Lacaille 6178 . .	35	. .	. .	. .	23. 9	25. 1	26. 8	28. 2	29. 5	. .	. .	. .	50 26. 70	0. 18	13. 14	14 50 40. 02	15. 62
	Lacaille 6186 . .	36	4. 9	7. 5	8. 9	21. 0	22. 3	23. 8	25. 4	26. 6	38. 6	40. 2	42. 5	52 23. 79	0. 24	13. 14	14 52 37. 17	15. 61
	Lacaille 6215 . .	37	56. 3	58. 6	59. 9	10. 8	12. 0	13. 3	14. 6	15. 8	26. 6	28. 0	30. 2	56 13. 28	0. 22	13. 14	14 56 26. 64	14. 69
	Ψ Bootis	38	7. 4	9. 7	11. 0	21. 9	23. 0	24. 4	25. 7	26. 8	37. 4	38. 9	41. 1	58 24. 30	0. 26	13. 15	14 58 37. 71	10. 83
30	α Bootis	39	56. 8	59. 0	0. 1	10. 4	11. 6	12. 9	14. 1	15. 2	25. 3	26. 5	28. 7	9 12. 78	0. 22	14. 85	14 9 27. 85	11. 21
	Moon I	†40	46. 3	48. 5	49. 7	0. 3	1. 4	2. 7	3. 9	5. 0	15. 4	16. 7	18. 8	42 2. 61	0. 23	14. 88	14 42 17. 72	. .
	α Libræ	41	51. 1	53. 3	54. 5	4. 6	5. 6	6. 8	8. 1	9. 2	19. 0	20. 3	22. 3	43 6. 80	0. 22	14. 88	14 43 21. 90	13. 56
	β Ursæ Minoris .	42	37. 9	43. 1	48. 0	52. 6	1. 8	. .	49. 4	58. 2	2. 8	6. 9	12. 7	51 56. 37	0. 75	14. 89	14 52 12. 01	2. 85
		†43	59. 2	6. 9	11. 5	48. 1	52. 2	56. 5	1. 2	4. 8	40. 9	45. 6	53. 2					
	Ψ Bootis	44	5. 5	7. 9	9. 2	20. 0	21. 2	22. 5	23. 8	25. 1	35. 7	37. 1	39. 3	58 22. 48	0. 23	14. 89	14 58 37. 60	10. 83
	ι¹ Libræ	45	57. 8	0. 0	1. 2	11. 4	12. 5	13. 6	14. 9	16. 1	26. 2	27. 4	29. 6	4 13. 70	0. 23	14. 90	15 4 28. 83	14. 02
	ζ¹ Libræ	46	5. 2	7. 3	8. 5	18. 4	19. 7	20. 7	22. 0	23. 2	32. 9	34. 1	36. 3	20 20. 75	0. 22	14. 92	15 20 35. 89	13. 88
	Lalande 28391 . .	47	10. 7	12. 2	13. 6	15. 0	17. 7	. .	. .	. .	. .	. .	. .	27 13. 84	38. 06	14. 92	15 28 6. 82	10. 76
	* + 27° 10′ . .	48	35. 4	37. 6	38. 9	49. 7	50. 8	52. 2	53. 5	54. 7	5. 3	6. 7	9. 0	27 52. 16	0. 23	14. 92	15 28 7. 31	10. 76
	α Cor. Borealis . .	49	24. 3	26. 7	28. 0	38. 8	40. 0	41. 3	42. 6	43. 8	54. 4	55. 9	58. 1	28 41. 26	0. 23	14. 92	15 28 56. 41	10. 79
	B. A. C. 5195 . .	50	51. 4	53. 7	55. 0	6. 3	7. 4	8. 8	10. 1	11. 2	22. 2	23. 6	25. 9	37 8. 69	0. 25	14. 93	15 37 23. 87	15. 28
	B. A. C. 5221 . .	51	57. 7	0. 1	1. 4	12. 6	13. 7	15. 0	16. 3	17. 5	28. 3	29. 7	32. 0	40 14. 94	0. 25	14. 94	15 40 30. 13	15. 24
	B. A. C. 5240 . .	52	17. 4	19. 7	21. 1	32. 3	33. 4	34. 8	36. 2	37. 3	48. 1	49. 6	52. 0	43 34. 72	+ 0. 25	14. 94	15 43 49. 91	15. 32
	A Scorpii	53	. .	. .	. .	25. 4	26. 6	28. 9	45. 3	47. 8	49. 2	50. 4	52. 1	45 40. 71	− 28. 07	14. 94	15 45 27. 58	14. 84
	3 Scorpii	54	. .	. .	. .	12. 8	14. 0	15. 3	16. 6	17. 7	. .	. .	. .	46 15. 28	+ 0. 19	+14. 94	15 46 30. 41	− 14. 84

28. Reduced from 11 wires.
30. Duplex. Angle 35°; distance 13″.
40. Steady.
43. Reduced from 11 wires.
Azimuth of the 27th assumed.

May 28, 4h. to 8h. n. = + 0. 150 s.
12h. to 14h. 0. 090.
29, 4h. to 15h. + 0. 035.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 28, 8. 8	+ 11. 53	+ 0. 051	+ 0. 208
29, 11. 7	+ 12. 95	+ 0. 060	+ 0. 210

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 30	α Scorpii	1	33.0	35.3	. .	. .	. .	. .	. .	. .	2.8	4.2	6.4	20 52.34	— 2.36	+14.98	16 21 4.96	— 15.22
Y.	φ Ophiuchi	2	51.0	53.2	. .	4.4	5.6	6.8	8.1	9.1	18.9	20.2	22.3	23 7.96	— 1.01	14.98	16 23 21.93	14.17
	ζ Ophiuchi	3	10.3	12.3	13.6	23.4	24.5	25.7	26.8	27.9	37.5	38.8	40.7	29 25.59	+ 0.22	14.99	16 29 40.80	13.63
31	α Serpentis	†4	. .	. .	. .	16.2	17.2	18.3	19.5	20.7	30.1	31.5	33.4	37 23.36	— 4.81	16.09	15 37 34.64	— 12.25
N.	Moon I	5	1.3	3.5	4.9	15.7	16.7	18.0	19.4	20.6	31.0	32.4	34.6	45 18.01	+ 0.23	16.10	15 45 34.34	. .
	ζ Ursæ Minoris	6	. .	. .	. .	38.3	43.1	48.5	54.6	59.5	. .	. .	. .	48 48.80	+ 0.71	16.10	15 49 5.61	+ 2.85
	β Scorpii	†7	. .	. .	. .	. .	. .	. .	. .	50.2	51.5	52.7	54.3	57 52.18	— 35.80	16.11	15 57 32.49	— 14.38
	δ Ophiuchi	8	42.2	44.3	45.5	55.0	56.2	57.4	58.6	59.6	9.1	10.4	12.3	6 57.33	+ 0.21	16.12	16 7 13.66	13.00
	σ Scorpii	†9	23.0	25.4	26.6	52.6	54.0	56.1	12.6	15.1	16.4	17.8	19.3	12 56.26	— 16.39	16.12	16 12 56.99	15.05
	α Scorpii	†10	31.8	. .	. .	. .	47.3	48.5	50.1	51.1	. .	. .	. .	20 45.74	+ 3.09	16.13	16 21 4.96	15.18
	Polaris	11	. .	. .	. .	. .	. .	. .	29.0	3.5	52.5	39.0	37.0	30 44.20	— 22 10.19	16.57	1 8 50.58	49.45
June 1	θ Virginis	†12	. .	. .	. .	48.8	50.1	52.1	7.0	9.3	10.5	11.7	13.1	3 2.82	+ 25.57	17.27	13 2 54.52	12.30
	Polaris, S. P.	13	. .	. .	. .	14.0	31.0	42.0	54.0	14.0	. .	. .	. .	8 43.00	— 8.00	17.27	1 8 52.27	49.90
	α Virginis	14	. .	. .	. .	42.3	43.3	44.5	45.8	46.8	. .	. .	. .	17 44.54	+ 0.15	17.27	13 18 1.96	12.60
	β Scorpii	15	. .	. .	. .	12.6	13.6	15.0	16.2	17.4	. .	. .	. .	57 14.96	0.15	17.32	15 57 32.43	14.39
	δ Ophiuchi	16	41.1	43.1	44.3	54.0	55.0	56.2	57.4	58.5	7.9	9.3	11.1	6 56.17	0.20	17.32	16 7 13.69	13.01
	σ Scorpii	17	22.0	24.2	25.6	36.2	37.3	38.6	39.8	40.9	51.4	52.9	54.0	12 38.45	0.20	17.32	16 12 55.97	15.06
	α Scorpii	18	30.6	32.8	34.2	45.0	46.1	47.5	48.8	49.8	. .	. .	. .	20 41.85	5.72	17.32	16 21 4.89	15.19
	Moon I	†19	24.5	26.9	28.3	. .	. .	. .	. .	. .	54.5	56.2	58.3	51 41.45	0.24	17.33	16 51 59.02	. .
	Moon II	20	54.1	56.4	57.7	8 4	9.5	11.0	12.3	13.4	23.9	25.3	27.6	54 10.87	0.20	17.33	16 54 28.40	. .
	Polaris	†21	. .	. .	. .	. .	42.0	28.5	17.0	. .	. .	. .	. .	8 29.17	6.00	17.47	1 8 52.64	50.34
	η Piscium	22	37.7	39.7	41.0	50.8	51.9	53.2	54.4	55.5	5.1	6.6	8.8	23 53.15	+ 0.21	17.48	1 24 10.84	11.11
Y.	α Arietis	23	. .	. .	. .	8.4	9.5	10.7	12.1	13.3	23.6	24.9	27.0	59 16.19	— 5.19	17.84	1 59 28.84	11.56
2	Sun I	24	36.1	38.4	39.5	50.0	51.1	52.4	53.7	54.9	5.1	6.6	8.5	38 52.39	+ 0.22	17.92	4 39 10.53	. .
	Sun II	25	53.0	55.1	56.5	6.9	8.0	9.3	10.5	11.7	22.0	23.3	25.4	41 9.25	0.22	17.92	4 41 27.39	. .
	α Canis Minoris	26	35.6	37.9	39.1	48.8	49.8	50.9	52.0	53.1	2.6	3.7	5.9	31 50.85	0.20	18.00	7 32 9.05	— 10.67
	Venus I	27	25.4	27.5	28.8	39.4	40.5	41.7	43.0	44.3	54.7	56.0	58.2	35 41.77	+ 0.22	18.01	7 36 0.00	+ 0.58
	β Geminorum	28	. .	. .	. .	36.4	37.6	39.0	40.3	41.4	52.2	53.8	55.9	36 44.58	— 5.43	18.01	7 36 57.16	— 12.51
3	Sun I	29	. .	. .	. .	. .	. .	. .	30.3	32.8	34.3	35.5	36.8	43 33.94	— 35.72	18.38	4 43 16.60	. .
N.	Sun II	30	58.4	0.8	2.0	12.5	13.6	14.8	16.2	17.3	27.5	28.9	31.0	45 14.82	+ 0.22	18.38	4 45 33.42	. .
	Venus I	31	56.5	58.0	59.2	0.6	3.2	. .	. .	. .	. .	. .	. .	39 59.50	+ 37.10	18.49	7 40 55.09	+ 0.58
	δ Ursæ Minoris	32	. .	. .	. .	. .	. .	. .	41.5	20.0	40.5	59.0	24.3	25 37.06	— 9 16.18	18.92	18 16 39.80	+ 50.35
	α Lyræ	33	42.6	45.1	46.7	59.1	0.4	1.9	3.5	4.9	16.8	18.5	20.8	32 1.85	+ 0.26	18.93	18 32 21.04	— 9.18
	ζ Aquilæ	34	35.2	37.5	38.7	48.6	49.7	50.9	52.2	53.4	2.7	4.0	6.4	58 50.85	0.21	18.95	18 59 10.01	11.47
	Moon II	35	34.4	36.7	38.0	48.6	49.7	51.0	52.2	53.4	3.7	5.1	7.2	7 50.91	0.21	18.96	19 8 10.08	. .
	ω Aquilæ	36	51.9	54.0	55.1	4.9	6.0	7.3	8.5	9.4	19.1	20.4	22.4	11 7.18	0.20	18.96	19 11 26.34	11.68
	ρ^1 Sagittarii	37	12.1	14.2	15.6	25.7	26.8	28.0	29.3	30.2	40.3	41.6	43.7	13 27.95	0.21	18.96	19 13 47.12	14.15
	O. Arg. S. 19609	38	41.7	43.9	45.1	55.9	57.0	58.4	59.6	0.7	11.4	12.9	15.8	20 58.33	+ 0.22	18.96	19 21 17.51	14.92
	* — 39° 3′	39	15.8	18.4	19.8	32.3	33.8	35.4	37.0	38.3	. .	. .	. .	28 28.85	+ 6.63	18.97	19 28 54.45	16.49
	κ Aquilæ	40	. .	. .	. .	. .	. .	. .	45.4	47.9	49.0	50.2	51.6	29 48.82	— 33.23	18.97	19 29 34.56	13.11
	* — 32° 33′	41	15.9	18.4	19.8	31.4	32.6	33.8	35.3	36.4	47.8	49.3	51.6	33 33.85	+ 0.24	18.97	19 33 53.06	15.55
	f Sagittarii	42	. .	52.5	53.9	4.1	5.2	6.5	7.7	8.9	18.8	20.2	.	38 6.42	0.20	18.97	19 38 25.59	14.17
	* — 38° 44′	43	12.6	15.1	16.7	29.3	30.5	31.9	33.5	34.7	46.9	48.7	50.9	42 31.89	0.25	18.98	19 42 51.12	16.26
4	α Canis Minoris	44	33.8	35.9	37.1	46.8	47.9	49.1	50.2	51.3	0.8	2.1	4.0	31 49.00	0.20	19.84	7 32 9.04	10.67
Y.	β Geminorum	45	19.8	22.3	23.7	34.7	35.8	37.1	38.6	39.6	50.4	51.8	54.2	36 37.09	0.23	19.84	7 36 57.16	— 12.50
	Venus I	46	12.1	14.4	15.5	26.4	27.5	28.7	30.1	31.1	41.4	42.9	44.9	45 28.64	+ 0.22	19.85	7 45 48.71	+ 0.59
	ω Aquilæ	47	50.7	52.8	54.0	3.9	5.0	6.1	7.4	8.3	18.0	19.3	21.4	11 6.08	— 0.08	20.36	19 11 26.36	— 11.70
	δ Aquilæ	48	3.4	5.5	6.7	16.4	17.5	18.6	19.8	20.7	30.3	31.6	33.3	18 18.53	0.10	20.37	19 18 38.80	12.41
	γ Aquilæ	49	12.3	14.5	15.5	25.5	26.5	27.8	28.9	29.9	39.5	40.7	42.8	39 27.63	0.09	20.39	19 39 47.93	11.73
	α Aquilæ	50	33.5	35.8	36.9	46.5	47.6	48.9	50.0	51.0	0.6	1.8	4.0	43 48.78	0.09	20.39	19 44 9.08	11.97
	α^2 Capricorni	51	54.7	56.7	57.9	8.0	9.0	10.2	11.4	12.5	22.1	23.4	25.3	10 10.11	0.12	20.42	20 10 30.41	13.35
	β Aquilæ	52	2.7	4.8	6.0	15.7	16.7	17.9	19.0	20.1	29.7	30.7	33.0	48 17.86	0.09	20.39	19 48 38.16	— 12.02
	Moon II	†53	41.4	43.6	45.0	55.4	56.6	57.8	59.1	0.1	10.3	11.5	13.8	10 57.69	— 0.13	+20.42	20 11 17.98	. .

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
May 30, 15.4	+ 14.92	+ 0.060	+ 0.212
31, 16.0	16.11	0.048	. .
June 1, 16.7	17.33	0.017	+ 0.200
2, 5.7	17.95	0.030	. .
3, 19.0	18.95	0.040	. .
4, 7.5	19.84	0.045	+ 0.200
20.1	+ 20.41	+ 0.055	— 0.100

4. C uncertain.
7. Faint.
9–10. Glimpses through clouds.
12. Blurred.
19. Imperfect; cloudy; correction for defective illumination 0.09.
21. Good observation.
53. A high mountain on the limb; observed general outline.

May 30. Night cloudy; stars steady.

s.
May 30. . . . n. = — 0.015.
31. . . . — 0.020.
June 1. . . . + 0.046.
2. . . . 0.006.
3. . . . 0.004.
4. 7h. to 8h. 0.004.
19h. to 22h. + 0.073.
June 4, 14h. Image east 0.16. Clamp west.
Image west 0.36. Clamp east.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
4	ρ Capricorni . . .	1	29.8	33.0	33.2	43.3	44.4	45.7	47.0	48.0	58.0	59.3	1.3	20 45.65	— 0.13	+20.42	20 21 5.94	— 13.65
	μ Aquarii	2	43.3	45.3	46.4	56.4	57.4	58.6	59.7	0.7	10.4	11.6	13.7	44 58.50	0.11	20.44	20 45 18.83	12.83
	α Cephei . . .	3	42.9	45.8	48.6	51.3	56.4	. .	4.4	9.2	11.8	14.2	17.1	15 0.72	0.08	20.48	21 15 21.12	7.03
		†4	28.6	33.0	35.6	56.1	58.4	1.0	3.5	5.3	25.6	28.3	32.5					
	β Cephei . . .	5	48.9	52.4	56.5	0.0	7.1	. .	2.3	8.9	12.5	16.0	20.2	26 35.09	0.09	20.48	21 26 55.48	5.17
		†6	51.2	56.8	0.5	28.7	31.7	35.1	38.8	42.0	9.2	13.2	18.8					
	ε Pegasi	†7	. .	. .	.	7.5	8.6	9.6	10.7	11.6	21.4	22.7	24.9	37 14.62	5.14	20.49	21 37 29.97:	11.54
5	ζ Cygni	8	. .	. .	. .	. .	29.5	46.8	3.9	. .	38.7	. .	. .	6 59.72	12.98	22.42	21 7 9.16	10.41
	Moon II	9	. .	. .	33.0	48.5	4.2	20.1	35.7	51.6	7.2	. .	. .	10 20.04	— 0.07	22.42	21 10 42.39	. .
	1 Pegasi	10	. .	. .	. .	53.4	9.6	25.5	41.3	57.0	.	. .	. .	15 25.36	+ 0.17	22.43	21 15 47.96	11.06
	β Aquarii	11	. .	. .	15.9	30.9	46.1	1.3	16.1	31.3	46.6	. .	. .	24 1.17	— 0.04	22.44	21 24 23.57	12.39
	ξ Aquarii	†12	. .	. .	. .	37.5	52.7	8.0	22.9	38.0	. .	. .	. .	30 7.78	0.03	22.44	21 30 30.19	12.46
	α Andromedæ . .	13	. .	. .	7.0	23.8	41.1	58.3	15.1	32.1	49.2	. .	. .	0 58.09	0.01	22.62	0 1 20.70	11.30
6	Sun I	14	57.4	59.6	0.8	11.4	12.4	13.7	15.0	16.1	26.4	28.0	30.0	55 13.71	. .	. .	. . . .	. .
	Sun II	15	14.6	16.8	8.0	28.6	29.7	30.9	32.1	33.3	43.7	45.1	47.3	57 30.92	. .	. .	. . . .	. .
	β Aquarii	16	45.2	47.2	48.2	58.2	59.2	0.3	1.4	2.4	12.1	13.3	15.2	24 0.25	0.11	23.56	21 24 23.70	12.42
	ξ Aquarii	17	51.6	53.7	55.0	4.6	5.7	6.9	8.2	9.1	18.6	19.8	21.7	30 6.81	0.11	23.56	21 30 30.26	12.49
	ε Pegasi	18	51.4	53.5	54.7	4.6	5.4	6.6	7.9	9.0	18.3	19.8	21.8	37 6.64	0.09	23.57	21 37 30.12	11.60
	δ Capricorni . . .	19	52.2	54.5	55.6	5.6	6.7	8.0	9.2	10.3	20.0	21.4	23.5	39 7.91	0.13	23.57	21 39 31.35	12.82
	α Aquarii	20	8.8	10.9	12.0	21.7	22.8	23.9	25.1	26.2	35.5	36.8	39.0	58 23.88	0.09	23.59	21 58 47.38	11.95
	Moon II	21	0.7	2.8	3.9	13.8	14.8	16.0	17.3	18.3	28.2	29.5	31.4	6 16.06	0.11	23.60	22 6 39.55	. .
	γ Aquarii	22	58.6	0.8	2.0	11.5	12.6	13.9	15.0	16.0	25.5	26.8	28.8	14 13.77	0.12	23.60	22 14 37.27	11.87
	α Pegasi	†23	19.6	21.7	22.9	32.8	33.8	35.1	36.3	37.3	47.0	48.4	50.4	57 35.03	0.08	23.63	22 57 58.58	11.29
7	γ Aquarii	24	57.7	59.8	0.9	10.6	11.7	12.7	14.0	15.0	24.3	25.6	27.7	14 12.73	0.10	24.70	22 14 37.33	11.90
	ζ Pegasi	25	0.4	2.4	3.6	13.5	14.5	15.7	17.0	17.9	27.5	28.7	30.9	34 15.65	0.09	24.71	22 34 40.27	11.45
	α Piscis Australis .	26	24.8	27.2	28.6	39.8	41.0	42.4	43.7	44.8	55.8	57.3	59.6	49 42.27	0.16	24.72	22 50 6.83	12.48
	α Pegasi	27	18.6	20.5	21.8	31.8	32.9	34.1	35.3	36.4	46.1	47.4	49.5	57 34.04	0.08	24.73	22 57 58.69	11.32
	Moon II	28	19.6	21.7	22.9	32.7	33.9	35.1	36.4	37.3	47.1	48.2	50.2	59 35.01	0.10	24.73	22 59 59.64	. .
	α Arietis	29	48.1	50.2	51.5	2.0	3.2	4.4	5.6	6.8	17.0	18.4	20.5	59 4.34	0.08	24.73	1 59 28.99	11.72
8	Lacaille 5580 . .	30	20.3	22.5	23.8	34.8	36.0	37.2	38.6	39.7	50.5	51.9	54.1	24 37.22	0.15	25.00	13 25 2.07	13.43
	ζ Virginis	31	6.0	8.0	9.1	18.8	19.8	20.9	22.1	23.2	32.7	34.0	36.0	27 20.96	0.10	25.00	13 27 45.86	12.17
	Polaris, S. P. . .	32	1.0	9.0	18.0	29.0	. .	. .	. .	. .	. .	. .	. .	31 44.25	23 11.76	25.00	1 8 57.49	55.17
	k Centauri (1st *) .	†33	16.8	19.2	20.7	32.1	33.3	34.7	36.2	37.3	48.4	50.1	52.3	43 34.65	— 0.16	25.02	13 43 59.51	14.02
	k Centauri (2d *) .	34	52.3	53.5	55.1	56.5	59.5	. .	10.7	13.4	14.8	16.1	18.0	43 34.99	+ 0.14	25.02	13 44 0.15	14.02
	Lacaille 5743 . .	35	.	. .	. .	17.2	18.4	20.0	21.4	22.6	. .	. .	. .	46 19.92	— 0.23	25.02	13 46 44.71	14.18
	Lacaille 5769 . .	36	12.4	14.9	16.4	28.6	30.1	31.5	33.0	34.2	46.2	47.9	50.2	49 31.40	0.18	25.02	13 49 56.24	14.53
	τ Virginis	37	3.8	5.7	6.9	16.7	17.7	18.9	20.0	21.0	30.5	31.8	33.8	54 18.80	0.10	25.03	13 54 43.73	12.29
	Lacaille 5800 . .	38	51.6	54.1	55.7	7.4	8.6	10.0	11.5	12.7	24.4	26.0	28.2	56 10.02	0.18	25.03	13 56 34.87	14.45
	α Draconis . . .	39	43.1	47.6	50.6	13.4	16.0	18.5	21.7	24.1	46.3	49.6	54.2	0 18.64	0.09	25.03	14 0 43.58	7.72
	α Bootis	40	. .	. .	. .	0.5	1.5	2.8	4.1	5.1	15.3	16.6	18.7	9 8.08	5.38	25.04	14 9 27.74	11.16
	Lacaille 5941 . .	41	38.9	41.3	42.8	54.0	55.4	56.8	58.2	59.4	10.7	12.2	14.4	17 56.74	0.17	25.05	14 18 21.62	14.62
	Lacaille 5955 . .	42	13.4	16.0	17.4	30.0	31.5	33.1	34.7	36.0	48.5	50.0	52.5	21 33.01	0.19	25.05	14 21 57.87	15.40
	Lacaille 5962 .	43	58.5	1.2	2.6	15.3	16.6	18.3	19.8	21.0	33.3	35.0	37.5	22 18.10	0.19	25.05	14 22 42.96	15.41
	ρ Bootis	44	15.9	18.2	19.7	30.9	32.2	33.5	34.8	36.1	47.1	48.6	50.9	25 33.45	0.07	25.05	14 25 58.43	10.73
	Lacaille 6040 . .	45	43.0	45.3	46.8	57.7	59.0	0.3	1.6	2.8	13.5	15.1	17.3	32 0.22	0.15	25.06	14 32 25.13	14.49
	Lacaille 6053 . .	46	11.1	13.6	15.0	25.9	27.1	28.5	29.9	31.0	41.9	43.3	45.4	33 28.43	0.15	25.06	14 33 53.34	14.51
	B. A. C. 4857 . .	47	. .	. .	. .	1.5	2.6	3.8	5.2	6.3	. .	. .	. .	36 3.88	0.19	25.07	14 36 28.76	14.11
	57 Hydræ	48	19.4	21.6	22.9	33.7	34.9	36.3	37.5	38.6	49.2	50.6	52.8	39 36.14	0.15	25.07	14 40 1.06	14.36
	Lacaille 6113 . .	49	12.7	14.9	16.4	27.3	28.6	29.8	31.2	32.3	43.2	44.6	46.7	41 29.79	0.15	25.07	14 41 54.71	14.59
	B. A. C. 4901 . .	50	36.6	39.2	40.5	52.8	54.0	55.5	56.9	58.3	10.1	11.7	14.3	43 55.45	0.18	25.07	14 44 20.34	15.51
	60 Hydræ	51	19.1	21.4	22.7	33.7	34.8	36.1	37.5	38.7	49.3	50.7	52.9	53 36.08	0.15	25.08	14 54 1.01	14.65
	Lacaille 6204 (1st *)	52	. .	50.0	51.2	. .	. .	. .	. .	. .	17.7	19.1	21.5	55 7.90	3.48	25.08	14 55 29.50	14.64
	Lacaille 6204 (2d *)	53	. .	. .	. .	2.4	3.6	5.0	6.3	7.5	. .	. .	. .	55 4.96	0.20	25.08	14 55 29.84	14.64
	ψ Bootis	54	. .	. .	. .	10.1	11.3	12.5	13.8	15.0	25.7	27.1	29.3	58 18.10	— 5.70	+25.08	14 58 37.48	— 10.81

4. Reduced from 11 wires.
6. Reduced from 11 wires.
7. Very faint.
12. Faint; cloudy.
23. On the fillet.
33. Distance 12″; angle 20°.

Adjusted collimation. r.
16h. Image east 0.04. Clamp east.
Image west 0.20. Clamp west.

s.
June 5, ... n. = +0.073.
6, . . . 0.073.
7, . . . 0.073.
8, 13h. to 16h. 0.070.
23h. to 3h. +0.030.

June 5. Chronograph stopped; observations made with eye and ear using clock beat.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 5, 22.0	+ 22.48	+ 0.070	— 0.100
6, 22.2	23.60	0.050	. .
7, 22.8	24.73	0.040	. .
8, 18.6	+ 25.29	+ 0.056	— 0.100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. June 8	B. A. C. 4998 . .	1	40.0	42.2	43.5	54.0	55.1	56.5	57.7	58.9	9.2	10.7	12.7	4 56.41	− 0.14	+25.09	15 5 21.36	− 14.41
	Lacaille 6293 . .	2	32.5	35.0	36.6	48.8	50.1	51.6	53.2	54.5	6.4	8.1	10.6	7 51.58	0.18	25.10	15 8 16.50	15.97
	β Libræ	3	1.7	3.8	5.0	14.7	15.9	17.0	18.2	19.3	28.8	30.1	32.1	9 16.96	0.11	25.10	15 9 41.95	13.26
N.	Lacaille 6329 . .	4	1.6	4.2	5.8	17.9	19.1	20.8	22.3	23.6	35.5	37.0	39.5	12 20.66	0.18	25.10	15 12 45.58	16.00
	Lacaille 6359 . .	5	36.9	39.3	40.8	53.0	54.5	56.0	57.4	58.7	10.7	12.3	14.8	15 55.86	0.18	25.11	15 16 20.79	16.05
	Lacaille 6410 . .	6	58.7	1.2	. .	14.9	16.3	17.8	19.2	20.6	. .	34.1	36.6	23 17.71	0.20	25.11	15 23 42.62	16.12
	γ Piscium	7	25.8	27.8	29.0	38.6	39.6	40.6	41.9	43.0	52.5	53.8	55.8	9 40.76	0.10	25.55	23 10 6.21	11.66
	ι Piscium	8	. .	. .	. .	. .	. .	. .	1.1	3.4	4.5	5.6	7.0	33 4.32	33.37	25.56	23 32 56.51	11.48
	Moon II . . .	9	30.9	46.6	. .	. .	. .	. .	. .	. .	. .	47.5	3.0	51 17.01	0.10	25.58	23 51 42.49	. .
		10	1.6	3.7	4.9	14.8	15.8	17.1	18.3	19.3	29.0	30.3	32.3					
	α Andromedæ .	11	1.6	20.8	. .	. .	. .	. .	. .	. .	. .	29.1	46.2	0 55.28	0.10	25.59	0 1 20.77	11.41
		12	38.3	40.5	41.8	52.8	54.0	55.3	56.6	57.8	8.6	10.1	12.3					
	Polaris	13	. .	. .	. .	. .	49.0	37.0	26.0	. .	. .	. .	. .	8 37.33	5.12	25.65	1 8 57.86	55.56
	β Arietis	14	24.7	26.9	28.1	38.4	39.4	40.8	41.9	43.1	53.2	54.6	56.7	46 40.71	0.10	25.69	1 47 6.30	11.53
Y.	α Arietis	15	46.9	49.1	50.4	0.9	2.0	3.2	4.6	5.6	16.0	17.3	19.5	59 3.23	0.10	25.90	1 59 29.03	11.75
	α Ceti	†16	27.7	29.8	31.0	40.6	41.5	42.8	44.0	45.0	54.7	55.9	57.7	54 42.79	0.10	25.93	2 55 8.62:	10.61
9	Sun I	17	17.0	19.3	20.6	31.2	32.4	33.6	34.9	35.8	46.2	47.7	49.7	7 33.49	0.07	26.00	5 7 59.42	. .
	Sun II	18	4.7	6.9	7.9	48.7	49.6	51.0	52.2	53.4	3.7	5.1	7.2	9 50.95	0.07	26.00	5 10 16.88	. .
	α Canis Majoris . .	19	25.7	27.8	29.0	39.2	40.3	41.5	42.7	43.8	53.6	55.0	57.0	38 41.42	0.13	26.05	6 39 7.34	8.60
	α Canis Minoris . .	20	28.0	30.0	31.1	40.8	42.0	43.1	44.3	45.4	54.8	56.0	58.0	31 43.05	0.09	26.08	7 32 9.04	10.65
	β Geminorum . . .	21	13.9	16.3	17.6	28.6	29.8	31.2	32.5	33.6	44.4	45.8	48.0	36 31.06	0.06	26.09	7 36 57.09	− 12.48
	Venus I	22	11.7	13.8	15.0	25.6	26.6	28.0	29.3	30.4	40.7	42.0	44.2	9 27.94	0.07	26.10	8 9 53.97	+ 0.60
	Polaris, S. P. . .	23	. .	. .	. .	. .	. .	. .	5.5	11.0	19.0	29.0	53.0	31 11.50	22 38.18	26.28	1 8 59.60	− 55.17
	* +78° 21′ . . .	24	22.8	. .	38.9	26.5	31.8	37.4	43.5	48.9	35.6	. .	51.6	41 37.44	0.00	26.29	13 42 3.73	3.82
	* +77° 50′ . . .	25	. .	. .	. .	1.8	6.5	12.2	17.9	22.9	. .	. .	. .	46 12.26	0.23	26.29	13 46 38.32	3.91
	η Bootis	26	44.0	45.1	46.5	47.7	48.7	. .	17.9	20.4	21.6	22.8	24.4	48 3.91	17.64	26.29	13 48 12.56	11.51
	* +76° 58′ . . .	27	. .	. .	. .	18.2	22.7	28.4	33.8	38.0	. .	. .	. .	53 28.22	0.22	26.29	13 53 54.29	3.95
	* +77° 6′ . . .	28	. .	. .	. .	54.0	59.3	4.8	10.2	14.6	. .	. .	. .	54 4.58	0.22	26.29	13 54 30.65	3.83
	* +66° 19′ . . .	29	0.4	5.2	8.1	31.8	34.6	37.8	40.6	43.1	6.6	9.8	14.5	1 37.50	0.02	26.30	14 2 3.78	7.40
	Weisse 83 . . .	30	35.2	37.2	38.4	48.3	49.2	50.4	51.5	52.6	2.1	3.5	5.4	5 50.35	0.12	26.30	14 6 16.53	12.85
	α Bootis	31	45.6	47.7	49.0	59.2	0.4	1.6	2.9	4.0	14.0	15.4	17.4	9 1.56	0.07	26.30	14 9 27.79	11.16
	Weisse 221 . . .	32	25.1	27.3	28.5	38.1	39.2	40.4	41.5	42.5	52.0	53.2	55.1	12 40.26	− 0.11	26.30	14 13 6.45	− 12.64
	Schwerd 835 . .	33	3.1	15.1	21.4	16.7	23.0	29.6	. .	42.3	37.0	44.3	55.4	18 28.79	+ 0.72	26.31	14 18 55.82	+ 0.34
	B. A. C 4800 . .	34	. .	. .	. .	. .	. .	. .	19.2	21.8	23.0	24.4	26.0	23 22.88	− 36.65	26.31	14 23 12.54	− 14.04
	Rumker 4739 . .	35	18.0	20.0	21.2	30.8	31.8	33.1	34.2	35.1	44.7	46.0	47.8	26 32.97	0.10	26.31	14 26 59.18	12.43
	3 Libræ	36	48.9	51.2	52.5	3.0	4.2	5.5	6.7	7.9	18.3	19.6	21.9	31 5.43	0.16	26.31	14 31 31.58	− 14.12
	Lalande F., 2523 .	37	40.0	51.6	58.4	55.1	1.8	9.0	15.8	21.7	17.9	25.6	37.0	37 8.56	0.01	26.32	14 37 34.87	+ 2.07
	59 Hydræ	38	. .	. .	. .	. .	. .	. .	44.4	47.1	48.4	49.8	51.4	50 48.22	37.40	26.32	14 50 37.14	− 14.57
	Lacaille 6199 . .	39	20.6	23.2	24.6	36.5	37.9	39.3	40.7	42.0	53.6	55.0	57.6	54 39.18	0.19	26.33	14 55 5.32	15.47
	Lacaille 6221 . .	40	57.9	0.5	2.0	13.7	15.0	16.5	17.9	19.2	30.8	32.4	34.8	57 16.43	0.19	26.33	14 57 42.57	15.54
	Lacaille 6261 . .	†41	22.7	25.3	26.5	38.8	40.0	41.6	42.8	44.3	56.0	57.7	0.0	3 41.43	0.20	26.33	15 4 7.56	15.79
	B. A. C. 5018 . .	42	23.9	26.3	27.6	38.5	39.7	41.0	42.3	43.5	54.2	55.7	57.7	6 40.95	0.16	26.33	15 7 7.12	14.78
	O. Arg. N. 15370 .	43	38.6	41.8	43.6	59.1	0.8	. .	4.6	6.0	21.0	23.0	26.3	21 2.48	0.02	26.34	15 21 28.80	8.40
	ε Serpentis . . .	44	21.3	23.4	24.5	34.3	35.4	36.6	37.8	38.7	48.3	49.6	51.5	43 36.94	0.09	26.35	15 44 2.75	12.42
	47 Libræ	45	27.3	29.6	30.6	41.0	42.1	43.4	44.6	45.7	55.8	57.0	59.1	46 43.29	0.14	26.36	15 47 9.51	14.33
	B. A. C. 5281 . .	46	1.9	4.2	5.4	15.8	16.9	18.2	19.4	20.5	30.6	31.9	34.0	49 18.07	0.14	26.36	15 49 44.29	14.50
	δ Scorpii	47	35.8	38.0	39.2	49.9	50.9	52.1	53.5	54.4	4.7	6.0	8.3	51 52.07	0.15	26.36	15 52 18.28	14.67
	Weisse 1057 . .	48	35.6	37.8	39.0	48.7	49.8	51.0	52.2	53.3	3.0	4.1	6.2	55 50.97	0.08	26.36	15 56 17.25	11.92
	Weisse 1086 . .	49	57.7	59.8	1.0	10.6	11.8	13.0	14.2	15.2	24.6	26.0	28.0	57 12.90	0.09	26.36	15 57 39.17	12.29
	Weisse 20 . . .	50	2.7	4.8	6.0	15.6	16.6	17.8	19.1	20.1	29.5	30.8	32.7	2 17.79	0.11	26.36	16 2 44.04	13.04
	Weisse 38 . . .	51	. .	. .	. .	12.8	14.1	16.2	31.5	34.0	35.2	36.3	37.7	3 27.22	26.55	26.36	16 3 27.03	13.93
	Weisse 111 . . .	52	24.0	26.1	27.3	37.2	38.1	39.4	40.6	41.6	51.2	52.5	54.5	6 39.32	0.12	26.37	16 7 5.57	13.65
	O. Arg. S. 15571 .	53	24.2	26.3	27.6	37.6	38.8	40.0	41.2	42.2	52.2	53.4	55.5	14 39.91	0.13	26.37	16 15 6.15	14.26
	α Scorpii	54	22.0	24.3	25.6	36.4	37.5	38.8	40.1	41.2	51.7	53.2	55.4	20 38.75	− 0.16	26.37	16 21 4.96	15.26
	Lacaille 6871 . .	55	28.6	30.9	32.2	43.2	45.0	46.5	47.8	49.0	. .	. .	. .	23 40.48	+ 5.73	+26.38	16 24 12.59	− 16.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 9, 14.4	+ 26.31	+ 0.033	− 0.100

16. Faint.
41. Faint.

June 9, 5h. to 8h. n. = + 0.030 s.
8h. to 3h. + 0.100.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
e 9	B. A. C. 5538	1	42. 0	44. 5	45. 8	57. 6	58. 9	0. 4	1. 7	3. 0	14. 5	16. 1	18. 5	27 0. 27	− 0. 19	+26. 38	16 27 26. 46	− 16. 43
	B. A. C. 5556	2	58. 4	0. 8	2. 0	13. 3	14. 5	15. 8	17. 2	18. 4	29. 2	30. 7	32. 9	30 15. 75	0. 17	26. 38	16 30 41. 96	15. 74
	B. A. C. 5572	3	44. 6	47. 0	48. 4	59. 7	0. 9	2. 3	3. 5	4. 7	15. 6	17. 3	19. 4	33 2. 12	0. 17	26. 38	16 33 28. 33	15. 83
	B. A. C. 5605	4	56. 7	59. 0	0. 4	11. 5	12. 8	14. 0	15. 5	16. 7	27. 7	29. 1	31. 4	36 14. 07	0. 17	26. 38	16 36 40. 28	15. 88
	B. A. C. 5623	5	15. 9	18. 1	19. 3	30. 0	31. 0	32. 3	33. 6	34. 8	45. 1	46. 6	48. 7	39 32. 31	0. 16	26. 38	16 39 58. 53	15. 15
	B. A. C. 5641	6	21. 5	23. 9	25. 0	35. 7	36. 8	38. 2	39. 4	40. 6	51. 0	52. 4	54. 6	42 38. 10	0. 16	26. 39	16 43 4. 33	15. 19
	B. A. C. 5672	7	. .	. .	25. 6	36. 7	37. 9	39. 4	40. 7	. .	53. 0	54. 6	56. 7	45 43. 08	3. 92	26. 39	16 46 5. 55	15. 96
	α Herculis	†8	45. 7	47. 8	49. 0	59. 0	0. 1	1. 3	2. 5	3. 5	13. 3	14. 6	16. 6	8 1. 22	0. 08	26. 40	17 8 27. 54	11. 63
	b Ophiuchi	9	21. 8	24. 0	25. 3	35. 9	37. 1	38. 4	39. 7	40. 9	51. 2	52. 6	54. 7	17 38. 33	0. 15	26. 41	17 18 4. 59	15. 22
	μ Sagittarii	10	56. 0	58. 1	59. 3	9. 8	10. 8	11. 9	13. 4	14. 4	24. 6	25. 9	28. 1	5 12. 03	0. 15	26. 43	18 5 38. 31	− 14. 86
	δ Ursæ Minoris	11	0. 0	35. 0	55. 0	37. 0	56. 5	15. 0	37. 0	53. 5	34. 0	54. 5	27. 0	16 14. 95	0. 00	26. 44	18 16 41. 39	+ 49. 98
	1 Aquilæ	12	7. 3	9. 4	10. 6	20. 3	21. 4	22. 6	23. 6	24. 7	34. 4	35. 5	37. 5	27 22. 48	− 0. 12	26. 44	18 27 48. 89	− 13. 54
	51 Cephei, S. P.	13	. .	. .	. .	23. 0	1. 0	38. 0	13. 0	52. 0	. .	. .	. .	34 37. 40	+ 0. 98	26. 45	18 35 4. 83	86. 57
	α Andromedæ	14	37. 3	39. 6	41. 0	51. 8	53. 0	54. 4	55. 7	56. 9	7. 6	9. 1	11. 3	0 54. 34	− 0. 06	26. 64	0 1 20. 92	11. 44
	β Ceti	15	1. 8	4. 2	5. 3	15. 6	16. 5	17. 9	19. 2	20. 2	30. 3	31. 5	33. 7	36 17. 84	0. 14	26. 65	0 36 44. 35	10. 72
	Moon II	16	3. 8	5. 9	7. 1	17. 1	18. 1	19. 4	20. 6	21. 6	31. 5	32. 8	34. 8	42 19. 34	− 0. 09	26. 65	0 42 45. 90	. .
	Polaris	17	. .	. .	. .	. .	54. 0	47. 0	36. 0	14. 0	. .	. .	. .	46 22. 75	+ 22 9. 84	26. 66	1 8 59. 25	56. 38
	α Ceti	18	27. 0	29. 1	30. 3	40. 0	41. 2	. .	43. 4	44. 4	53. 8	55. 1	57. 0	54 42. 13	− 0. 08	26. 49	2 55 8. 54	10. 63
10	Sun I	19	25. 0	27. 1	28. 5	39. 0	40. 2	41. 5	42. 8	43. 8	54. 2	55. 6	57. 7	11 41. 40	0. 05	26. 58	5 12 7. 93	. .
	Sun II	†20	. .	9. 6	25. 7	. .	. .	. .	. .	. .	31. 1	47. 6	. .	13 58. 82	0. 05	26. 58	5 14 25. 35	. .
		21	42. 5	44. 6	46. 0	56. 4	57. 6	58. 9	0. 2	1. 3	11. 5	13. 0	15. 0					
	β Geminorum	22	. .	. .	. .	28. 0	29. 0	30. 4	31. 9	33. 0	. .	. .	. .	36 30. 46	− 0. 08	26. 68	7 36 57. 06	12. 48
	ζ Virginis	23	42. 7	44. 0	45. 2	46. 5	48. 9	. .	16. 9	18. 0	19. 1	20. 3	21. 3	27 2. 29	+ 16. 70	26. 91	13 27 45. 90	12. 16
	Polaris, S. P.	†24	. .	. .	. .	. .	. .	. .	5. 5	12. 5	22. 0	29. 5	54. 0	31 12. 70	− 22 40. 03	26. 91	1 8 59. 58	56. 82
	η Bootis	25	29. 8	32. 0	33. 2	43. 4	44. 5	45. 7	47. 0	48. 1	58. 2	59. 5	1. 5	47 45. 72	0. 05	26. 92	13 48 12. 59	11. 50
	50 Cassiopeæ, S. P.	26	11. 8	5. 2	0. 9	. .	27. 3	33. 6	19. 4	. .	45. 8	42. 1	35. 7	51 23. 53	0. 11	26. 92	1 51 50. 34	16. 72
	τ Virginis	27	1. 9	3. 9	5. 0	14. 7	15. 7	16. 9	18. 2	19. 1	28. 6	29. 9	31. 9	54 16. 84	− 0. 09	26. 92	13 54 43. 72	12. 27
	α Draconis	28	. .	45. 9	48. 6	11. 4	14. 0	16. 7	19. 6	21. 9	44. 5	47. 4	. .	0 16. 67	+ 0. 05	26. 93	14 0 43. 65	7. 66
	50 Hydræ	29	15. 6	18. 0	19. 3	30. 1	31. 3	32. 6	33. 8	35. 0	45. 6	47. 0	49. 3	4 32. 51	− 0. 18	26. 93	14 4 59. 26	13. 94
	B. A. C. 4711	30	. .	. .	. .	58. 4	59. 5	0. 9	2. 0	3. 2	. .	. .	. .	5 0. 80	0. 23	26. 93	14 5 27. 50	13. 90
	Lacaille 5880	31	. .	. .	29. 9	46. 2	. .	. .	. .	53. 2	10. 1	. .	. .	9 20. 14	0. 18	26. 93	14 9 46. 89	13. 98
		32	3. 4	5. 6	6. 9	17. 7	18. 8	20. 2	21. 5	22. 8	33. 2	34. 6	36. 8					
	ι Cassiopæ, S. P.	33	2. 7	57. 6	54. 4	30. 2	27. 4	24. 6	21. 5	19. 1	54. 9	51. 3	46. 8	17 24. 59	0. 09	26. 94	2 17 51. 44	16. 28
	ρ Bootis	34	14. 0	16. 4	17. 7	29. 0	30. 2	31. 6	33. 0	34. 2	45. 3	46. 8	49. 0	25 31. 56	0. 03	26. 94	14 25 58. 47	10. 71
	5 Ursæ Minoris	35	. .	. .	. .	17. 9	22. 4	27. 5	32. 6	36. 6	. .	. .	. .	27 27. 40	0. 02	26. 95	14 27 54. 33	2. 43
	ε Bootis	36	19. 4	21. 7	22. 9	33. 9	35. 0	36. 4	37. 8	38. 9	49. 6	51. 0	53. 3	38 36. 35	0. 04	26. 95	14 38 3. 26	10. 89
	α Libræ	†37	39. 7	41. 7	43. 0	53. 0	54. 1	55. 4	56. 7	57. 7	7. 3	8. 7	10. 8	42 55. 28	0. 14	26. 95	14 43 22. 09	13. 56
	β Ursæ Minoris	38	. .	. .	. .	36. 4	40. 4	45. 0	49. 3	53. 4	. .	. .	. .	50 44. 90	0. 34	26. 96	14 51 11. 52	2. 36
	Polaris	39	. .	. .	. .	. .	. .	. .	. .	. .	35. 0	8. 0	58. 0	29 53. 67	21 20. 84	27. 34	1 9 0. 17	57. 27
	Moon II	†40	52. 6	54. 0	. .	. .	. .	. .	. .	. .	. .	7. 2	8. 6	33 34. 78	3. 97	27. 34	1 33 58. 15	. .
		41	. .	. .	. .	. .	29. 6	30. 9	32. 2	33. 2	43. 2	44. 5	46. 6					
	β Arietis	42	23. 0	25. 2	26. 4	36. 8	37. 9	39. 1	40. 4	41. 4	51. 5	52. 8	54. 9	46 39. 04	0. 05	27. 35	1 47 6. 34	11. 60
12	α Bootis	43	. .	. .	. .	56. 0	57. 0	58. 3	59. 6	0. 8	10. 7	12. 1	14. 0	9 3. 56	5. 40	29. 52	14 9 27. 68	11. 14
	λ Virginis	44	. .	2. 8	4. 0	14. 0	15. 0	16. 3	17. 4	18. 4	28. 2	29. 4	. .	11 16. 17	0. 12	29. 52	14 11 45. 57	13. 12
	Lacaille 5906	45	5. 4	7. 8	9. 1	19. 8	20. 9	22. 3	23. 7	24. 9	35. 4	37. 0	39. 1	13 22. 31	0. 13	29. 52	14 13 51. 70	14. 07
	ρ Bootis	46	11. 3	13. 9	15. 2	26. 5	27. 6	29. 1	30. 4	31. 5	42. 6	44. 0	46. 5	25 28. 96	0. 10	29. 52	14 25 58. 38	10. 69
	Lacaille 6042	47	. .	. .	. .	0. 2	1. 5	2. 7	3. 9	5. 1	. .	. .	. .	32 2. 64	0. 17	29. 52	14 32 31. 99	14. 22
	Lacaille 6047	†48	16. 3	18. 6	20. 0	30. 6	31. 6	32. 9	34. 2	35. 5	46. 0	47. 5	49. 6	32 32. 98	0. 12	29. 53	14 33 2. 39	14. 24
	4 Libræ	49	. .	. .	. .	50. 9	52. 0	53. 4	54. 8	55. 8	. .	. .	. .	34 53. 38	0. 17	29. 53	14 35 22. 74	14. 16
	56 Hydræ	50	3. 3	5. 5	6. 7	17. 5	18. 6	20. 0	21. 2	22. 4	33. 0	34. 2	36. 4	39 19. 89	0. 12	29. 53	14 39 49. 30	14. 29
	B. A. C. 4888	51	42. 3	44. 5	45. 7	56. 3	57. 5	58. 8	0. 1	1. 3	11. 5	12. 9	15. 0	40 58. 72	0. 12	29. 53	14 41 28. 13	14. 17
	B. A. C. 4911	52	31. 9	34. 1	35. 6	46. 5	47. 8	49. 0	50. 3	51. 4	2. 2	3. 6	5. 8	45 48. 93	0. 13	29. 53	14 46 18. 33	14. 57
	Lacaille 6162	53	. .	. .	. .	36. 0	37. 1	38. 6	39. 7	40. 8	. .	. .	. .	48 38. 44	0. 18	29. 53	14 49 7. 79	14. 68
	β Libræ	54	57. 4	59. 5	0. 6	10. 4	11. 5	12. 8	13. 9	14. 8	24. 4	25. 7	27. 6	9 12. 60	− 0. 11	+29. 54	15 9 42. 03	− 13. 26

8. On fillet.
20. After set C the sun shone on the telescope and axis.
24. Steady.
37. Very faint.
40–41. Cloudy, faint, and uncertain, except D, which is fair.
48. Cloudy (?)
June 11–12. About noon the sun was shining on the instrument and pier.

June 10. n. = + 0.146 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 10, 11. 5	+ 26. 83	+ 0. 039	− 0. 100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 12	B. A. C. 5117	1	. .	. .	. .	19. 2	20. 5	21. 8	23. 0	24. 2	. .	. .	. .	25 21. 74	— 0. 17	+29. 55	15 25 51. 12	— 14. 81
N.	α Serpentis	2	50. 2	52. 2	53. 4	3. 0	4. 1	5. 4	6. 5	7. 6	17. 1	18. 4	20. 2	37 5. 28	0. 10	29. 56	15 37 34. 74	12. 27
	B. A. C. 5220	3	38. 0	40. 2	41. 5	52. 0	53. 1	54. 4	55. 8	56. 9	7. 0	8. 6	10. 7	39 54. 38	0. 12	29. 56	15 40 23. 82	14. 71
	ε Serpentis	4	18. 1	20. 3	21. 5	30. 2	32. 3	33. 4	34. 7	35. 6	45. 2	46. 5	48. 5	43 33. 30	0. 10	29. 56	15 44 2. 76	— 12. 43
	ζ Ursæ Minoris	5	22. 4	32. 5	37. 9	25. 5	30. 3	35. 8	42. 0	46. 8	33. 0	39. 1	49. 0	48 35. 85	0. 35	29. 56	15 49 5. 06	+ 3. 35
	Lacaille 6657	6	51. 1	53. 7	55. 3	. .	. .	. .	. .	. .	24. 7	26. 5	29. 0	55 10. 05	0. 10	29. 57	15 55 39. 52	— 16. 52
	Lacaille 6658	7	. .	. .	. .	11. 7	13. 0	14. 5	16. 2	17. 4	. .	. .	. .	55 14. 56	0. 21	29. 57	15 55 43. 92	16. 52
14	α Tauri	†8	30. 6	31. 7	32. 8	34. 1	35. 2	. .	3. 7	6. 3	7. 5	8. 6	10. 3	27 50. 08	17. 36	32. 36	4 28 5. 08	11. 61
15	Sun I	9	. .	. .	. .	33. 0	34. 4	36. 7	52. 8	55. 4	56. 8	58. 0	59. 5	32 48. 32	28. 09	32. 38	5 32 52. 61	. .
	Sun II	10	48. 8	4. 9	. .	. .	. .	. .	. .	. .	. .	10. 4	26. 8	34 38. 05	0. 05	32. 38	5 35 10. 38	. .
		11	21. 7	23. 8	25. 2	35. 6	36. 8	38. 0	39. 5	40. 4	50. 8	52. 3	54. 5					
	α² Geminorum	12	. .	. .	. .	34. 2	35. 8	37. 9	55. 6	58. 4	59. 8	1. 0	2. 7	25 50. 68	30. 37	32. 43	7 25 52. 74	12. 99
	α Canis Minoris	13	21. 6	23. 6	24. 8	34. 5	35. 4	36. 6	37. 9	39. 0	48. 5	49. 6	51. 8	31 36. 66	0. 09	32. 43	7 31 9. 00	10. 65
	Venus I	14	4. 8	7. 0	8. 3	18. 6	19. 7	21. 0	22. 4	23. 6	33. 6	35. 0	37. 0	37 21. 00	— 0. 06	32. 45	8 37 53. 39	. .
	Venus II	15	42. 7	44. 3	45. 7	46. 9	49. 5	. .	53. 8	56. 4	57. 7	58. 8	0. 3	37 21. 61	+ 0. 21	32. 45	8 37 54. 27	. .
	θ Virginis	16	6. 9	9. 0	10. 2	19. 8	20. 8	22. 0	23. 2	24. 3	33. 7	35. 0	37. 0	2 21. 99	— 0. 11	32. 55	13 2 54. 43	12. 19
	Polaris, S. P.	17	. .	. .	. .	1. 0	20. 0	31. 5	43. 0	3. 0	. .	. .	. .	8 31. 70	+ 0. 62	32. 56	13 9 4. 88	61. 51
	τ Virginis	18	. .	. .	. .	. .	. .	. .	41. 0	43. 4	44. 5	45. 7	47. 1	54 44. 34	— 33. 28	32. 58	13 54 43. 64	12. 24
	Lacaille 5922	19	14. 3	16. 8	18. 2	30. 0	31. 4	32. 8	34. 3	35. 5	47. 0	48. 5	50. 9	58 32. 70	0. 21	32. 58	13 59 5. 07	14. 43
	Lacaille 5938	20	41. 5	43. 9	45. 1	56. 3	57. 5	58. 8	0. 3	1. 4	12. 2	13. 7	16. 0	1 58. 79	0. 19	32. 58	14 2 31. 18	14. 07
	Lacaille 5942	21	37. 9	40. 3	41. 5	52. 6	53. 8	55. 1	56. 6	57. 8	8. 5	10. 0	12. 3	2 55. 13	0. 19	32. 58	14 3 27. 52	14. 06
	B. A. C. 4719	22	19. 9	22. 3	23. 6	34. 7	35. 9	37. 1	38. 5	39. 6	50. 5	51. 9	54. 0	6 37. 09	0. 19	32. 58	14 7 9. 48	14. 08
	α Bootis	23	39. 2	41. 3	42. 6	52. 9	53. 9	55. 2	56. 5	57. 5	7. 6	9. 0	11. 0	8 55. 16	0. 06	32. 58	14 9 27. 68	11. 11
	Lacaille 5906	24	2. 4	4. 7	5. 9	16. 9	18. 0	19. 2	20. 7	21. 8	32. 4	33. 6	35. 9	13 19. 23	0. 18	32. 58	14 13 51. 63	14. 04
	θ Bootis	25	. .	. .	. .	58. 4	0. 2	2. 0	4. 1	5. 7	21. 3	23. 5	26. 7	20 10. 24	8. 17	32. 59	14 20 34. 66	8. 94
	Lacaille 5979	26	30. 9	33. 3	34. 5	45. 1	46. 4	47. 8	49. 0	50. 2	0. 7	2. 0	4. 3	23 47. 65	0. 18	32. 59	14 24 20. 06	14. 14
	Lacaille 6000	27	1. 4	3. 9	5. 3	17. 0	18. 2	19. 7	21. 1	22. 3	33. 8	35. 5	37. 7	27 19. 63	0. 21	32. 59	14 27 52. 01	14. 90
	* — 34° 11′	28	45. 8	48. 4	50. 0	1. 6	2. 9	4. 3	5. 9	7. 0	18. 5	19. 9	22. 2	28 4. 23	0. 21	32. 59	14 28 36. 61	14. 90
	Lacaille 6042	29	42. 8	45. 0	46. 2	57. 0	58. 1	59. 4	0. 8	1. 8	12. 4	13. 9	16. 1	31 59. 41	0. 17	32. 59	14 32 31. 83	14. 21
	Lacaille 6047	30	. .	. .	. .	27. 4	28. 5	29. 8	31. 2	32. 3	. .	. .	. .	32 29. 84	0. 22	32. 59	14 33 2. 21	14. 23
	4 Libræ	31	33. 6	35. 9	37. 3	47. 8	49. 0	50. 2	51. 5	52. 7	3. 0	4. 5	6. 6	34 50. 19	0. 17	32. 59	14 35 22. 61	14. 14
	56 Hydræ	32	0. 1	2. 4	3. 7	14. 2	15. 5	16. 8	18. 0	19. 2	29. 8	31. 2	33. 4	39 16. 75	0. 17	32. 59	14 39 49. 17	14. 20
	B. A. C. 4888	33	39. 2	41. 3	42. 7	53. 2	54. 3	55. 6	56. 9	58. 0	8. 4	9. 6	11. 8	40 55. 55	0. 17	32. 59	14 41 27. 97	14. 16
	α Libræ	34	33. 8	35. 9	37. 1	47. 1	48. 2	49. 5	50. 7	51. 8	1. 5	2. 9	4. 9	42 49. 40	0. 14	32. 59	14 43 21. 85	13. 55
	12 Libræ	35	38. 0	40. 2	41. 5	52. 0	53. 2	54. 5	55. 9	57. 0	7. 3	8. 7	10. 8	45 54. 46	0. 17	32. 59	14 46 26. 88	14. 25
	14 Libræ	36	46. 4	48. 7	49. 9	0. 5	1. 8	3. 0	4. 3	5. 4	15. 9	17. 3	19. 5	49 2. 97	0. 17	32. 60	14 49 35. 40	14. 35
	Lacaille 6199	37	. .	. .	. .	30. 3	31. 5	33. 0	34. 5	35. 6	. .	. .	. .	54 32. 98	0. 27	32. 60	14 55 5. 31	15. 45
	Lacaille 6221	38	. .	. .	. .	7. 5	8. 8	10. 2	11. 6	13. 0	. .	. .	. .	57 10. 22	0. 27	32. 60	14 57 42. 55	15. 53
	* — 33° 51′ (?)	†39	. .	. .	. .	47. 6	48. 9	50. 5	51. 9	53. 3	. .	. .	. .	0 50. 44	0. 27	32. 60	15 1 22. 77	15. 37
	Lacaille 6293	40	. .	. .	. .	41. 1	42. 4	44. 0	45. 6	46. 7	58. 8	0. 5	2. 9	7 50. 25	6. 55	32. 60	15 8 16. 30	15. 96
	Lacaille 6329	41	54. 1	56. 8	58. 2	10. 4	11. 7	13. 2	14. 7	16. 0	28. 0	29. 4	31. 9	12 13. 13	0. 23	32. 60	15 12 45. 50	16. 00
	Lacaille 6359	42	29. 2	31. 7	33. 3	45. 5	46. 7	48. 3	49. 7	51. 0	3. 0	4. 7	7. 0	15 48. 19	0. 23	32. 61	15 16 20. 57	16. 05
	B. A. C. 5296	43	23. 5	25. 8	27. 2	38. 3	39. 5	40. 9	42. 3	43. 5	54. 3	55. 7	57. 9	50 40. 81	0. 19	32. 62	15 51 13. 24	[illegible]. 48
	Lacaille 6657	44	. .	. .	. .	4. 4	5. 6	7. 0	8. 7	9. 9	. .	. .	. .	55 7. 12	0. 29	32. 62	15 55 39. 45	16. 53
	Lacaille 6658	45	52. 6	55. 0	56. 4	. .	. .	. .	. .	. .	26. 3	27. 8	30. 4	55 11. 42	0. 18	32. 62	15 55 43. 86	16. 52
	β Scorpii	46	. .	. .	. .	12. 6	13. 9	16. 0	31. 8	34. 2	35. 5	36. 7	38. 2	57 27. 36	27. 38	32. 62	15 57 32. 60	14. 46
	B. A. C. 5374	47	46. 5	48. 7	50. 0	1. 1	2. 3	3. 6	5. 1	6. 1	17. 0	18. 5	20. 7	2 3. 60	0. 19	32. 63	16 2 36. 04	15. 51
	B. A. C. 5389	48	23. 2	25. 6	26. 9	37. 8	39. 0	40. 4	41. 7	42. 8	53. 6	55. 2	57. 4	4 40. 33	0. 19	32. 63	16 5 12. 77	15. 49
	B. A. C. 5429	49	3. 2	5. 6	6. 9	17. 8	19. 0	20. 4	21. 7	22. 8	33. 7	35. 2	37. 3	9 20. 33	0. 18	32. 63	16 9 52. 78	15. 47
	σ Scorpii	†50	7. 1	9. 4	10. 7	21. 4	22. 5	23. 8	25. 1	26. 2	36. 6	38. 0	40. 2	12 23. 73	0. 17	32. 63	16 12 56. 19	15. 15
	B. A. C. 5457	51	. .	. .	. .	53. 6	54. 9	56. 4	58. 0	59. 2	. .	. .	. .	14 56. 42	0. 29	32. 63	16 15 28. 76	16. 69
	α Scorpii	52	15. 8	18. 0	19. 4	30. 0	31. 3	32. 6	34. 0	35. 2	45. 6	47. 0	49. 1	20 32. 55	0. 18	32. 63	16 21 5. 00	15. 30
	ζ Ophiuchi	53	. .	. .	56. 4	6. 2	7. 4	8. 5	9. 7	10. 7	20. 4	21. 7	23. 7	29 11. 63	3. 29	32. 64	16 29 40. 98	13. 76
	B. A. C. 5564	54	57. 0	59. 2	0. 5	11. 4	12. 4	13. 7	15. 0	16. 2	26. 7	28. 2	30. 3	31 13. 69	— 0. 17	+32. 64	16 31 46. 16	— 15. 32

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 12, 15.0	+ 29.54	+ 0.030	— 0.100
15, 12.8	+ 32.55	+ 0.023	. .

8. Sun shone on W. pier during observation.
39. Faint and uncertain.
50. Duplex. Distance 23″; angle 180°.

June 12, 16h. Image west 0.287 r. Clamp west.
Image west 0.01. Clamp east.
Image west 0.28. Clamp west.
Readings quite satisfactory.

June 12. n. = + 0.029 s.
15. + 0.132.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
15	B. A. C. 5595 . .	1	39.4	41.6	42.8	53.6	54.8	56.1	57.4	58.6	9.3	10.9	12.8	34 56.12	— 0.18	+32.64	16 35 28.58	— 15.43
	B. A. C. 5608 . .	2	36.8	38.9	40.3	50.9	52.3	53.6	54.9	56.0	6.5	8.0	10.1	36 53.48	0.18	32.64	16 37 25.94	15.42
	18 Ophiuchi . . .	3	39.6	41.8	43.1	53.6	54.9	56.0	57.4	58.6	9.0	10.3	12.7	40 56.09	0.17	32.64	16 41 28.56	15.22
	B. A. C. 5641 . .	4	15.6	17.7	19.0	29.8	30.9	32.0	33.4	34.6	44.8	46.4	48.5	42 32.07	0.17	32.64	16 43 4.54	15.25
	B. A. C. 5695 . .	5	23.3	25.5	26.7	36.8	37.9	39.0	40.3	41.4	51.3	52.7	54.7	47 39.05	0.14	32.64	16 48 11.55	14.41
	κ Ophiuchi . . .	6	26.8	28.9	30.1	39.8	40.9	42.0	43.2	44.4	54.0	55.2	57.3	50 42.05	— 0.08	32.64	16 51 14.61	— 12.02
	ε Ursæ Minoris . .	7	. .	3.0	11.8	23.3	31.2	40.0	49.0	55.9	6.0	16.3	. .	59 39.61	+ 0.15	32.65	17 0 12.41	+ 14.80
16	Sun I	8	12.4	14.6	15.8	26.5	27.7	29.0	30.3	31.4	41.7	43.0	45.0	36 28.86	— 0.12	33.15	5 37 1.89	. .
	Sun II	9	30.1	32.4	33.6	44.2	45.4	46.7	47.9	49.0	59.3	0.8	2.9	38 46.57	0.12	33.15	5 39 19.60	. .
	α Canis Majoris . .	†10	18.4	20.8	21.9	32.2	33.1	34.4	35.4	36.6	46.6	47.9	50.0	38 34.30	0.21	33.17	6 39 7.26	— 8.62
	α Canis Minoris . .	11	21.0	23.0	24.3	33.8	34.8	35.9	37.0	38.1	47.7	49.1	50.9	31 35.96	0.15	33.20	7 31 9.01	10.65
	β Geminorum . . .	12	6.9	9.3	10.6	21.8	22.9	24.0	25.5	26.7	37.4	38.8	41.1	36 24.09	0.12	33.20	7 36 57.17	— 12.48
	Venus I	13	. .	. .	. .	51.5	52.7	54.0	55.2	56.4	. .	. .	. .	41 53.96	0.18	33.23	8 42 27.01	+ 0.62
	α Hydræ	14	4.7	6.5	7.9	17.7	18.7	19.9	21.0	22.0	31.5	32.7	34.8	20 19.76	0.19	33.24	9 20 52.81	— 10.37
	Lacaille 5812 . .	15	56.7	59.4	1.1	13.0	14.2	15.7	17.3	18.7	30.4	32.3	34.4	57 15.75	0.31	33.36	13 57 48.80	14.59
	O. Arg. S. 13444 .	16	59.0	1.1	2.5	12.5	13.6	14.8	16.1	17.2	27.0	28.3	30.3	3 14.76	0.21	33.37	14 3 47.92	13.23
	Weisse 83 . . .	17	28.0	30.4	31.3	41.0	42.0	43.3	44.5	45.5	55.0	56.5	58.4	5 43.26	0.19	33.37	14 6 16.44	12.81
	α Bootis	18	38.5	40.7	41.9	52.1	53.3	54.6	55.8	56.8	6.9	8.3	10.4	8 54.48	0.13	33.37	14 9 27.72	11.10
	ψ Centauri . . .	19	25.9	28.8	30.1	42.1	43.5	45.0	46.4	47.9	59.6	1.3	3.8	11 44.95	0.31	33.37	14 12 18.01	14.89
	Lacaille 5925 . .	20	52.4	55.1	56.5	8.6	9.9	11.3	12.9	14.0	26.0	27.5	29.9	16 11.28	0.31	33.37	14 16 44.34	14.94
	Lacaille 5945 . .	21	27.0	29.5	30.9	42.6	44.0	45.4	46.9	48.0	59.5	1.1	3.5	18 45.31	0.30	33.37	14 19 18.38	14.79
	Lacaille 5967 . .	22	9.8	12.4	13.6	25.4	26.6	28.0	29.5	30.6	42.0	43.5	46.0	22 27.95	0.29	33.37	14 23 1.03	14.79
	Lacaille 5991 . .	23	37.7	40.1	41.6	53.5	54.6	56.0	57.6	58.7	10.3	12.0	14.3	25 56.04	0.30	33.37	14 26 29.11	14.92
	Lacaille 6015 . .	24	59.0	1.7	3.1	15.5	16.8	18.3	19.7	21.1	33.2	34.8	37.4	29 18.24	0.31	33.38	14 29 51.31	15.62
	Lacaille 6038 .	25	49.6	52.1	53.6	5.4	6.8	8.0	9.4	10.9	22.4	24.0	26.5	32 8.06	0 30	33.38	14 32 41.14	15.10
	B. A. C. 4852 . .	26	29.9	32.4	33.9	45.6	46.8	48.4	49.7	50.8	2.5	4.0	6.3	34 48.21	0.29	33.38	14 35 21.30	15.04
	B. A. C. 4858 . .	27	48.1	50.8	52.1	3.9	5.2	6.6	8.0	9.2	20.9	22.2	24.7	36 6.52	0.29	33.38	14 36 39.61	15.07
	Lacaille 6100 . .	28	17.8	20.3	21.8	33.7	35.1	36.5	38.0	39.1	50.7	52.3	54.6	39 36.36	0.30	33.38	14 40 9.44	15.19
	α Libræ	29	33.1	35.4	36.4	46.3	47.5	48.6	50.0	51.0	0.8	2.0	4.1	42 48.65	0.21	33.38	14 43 21.82	13.55
	B. A. C. 4923 . .	30	41.9	44.1	45.4	. .	. .	. .	. .	. .	10.5	11.8	14.0	48 57.95	0.19	33.38	14 49 31.14	14.01
	* — 20° 47′ . .	31	. .	. .	. .	56.7	57.8	59.0	0.3	1.4	. .	. .	. .	48 59.04	0.28	33.38	14 49 32.14	14.01
	2 Serpentis . . .	32	3.2	5.3	6.4	16.0	17.0	18.3	19.6	20.5	30.0	31.2	33.2	54 18.25	0.16	33.39	14 54 51.48	12.57
	Lacaille 6421 . .	33	48.5	51.0	52.4	4.0	5.1	6.5	7.9	9.1	20.4	21.8	24.4	25 6.46	0.28	33.40	15 25 39.58	15.56
	Lacaille 6447 . .	34	17.4	19.1	20.8	22.5	25.6	. .	42.5	45.4	47.0	48.5	50.4	29 3.92	0.00	33.40	15 29 37.32	16.38
	Lacaille 6448 . .	35	54.2	56.9	58.2	10.7	11.9	13.4	15.1	16.3	28.5	30.2	32.6	29 13.45	0.32	33.40	15 29 46.53	16.38
	B. A. C. 5171 . .	36	57.0	59.5	1.2	13.1	14.6	16.1	17.6	18.8	30.6	32.0	34.7	33 15.93	0.31	33.40	15 33 49.02	16.20
	Lacaille 6541 . .	37	18.0	20.5	22.0	33.3	34.4	35.9	37.4	38.6	49.8	51.3	53.3	40 35.86	0.28	33.41	15 41 8.97	15.70
	Lacaille 6566 . .	38	54.9	57.2	58.6	9.9	11.1	12.4	13.9	15.0	26.0	27.4	29.7	44 12.37	0.27	33.41	15 44 45.51	15.50
	ξ Lupi, (1st *) . .	39	21.5	24.0	25.3	. .	. .	. .	. .	. .	53.6	55.2	57.6	47 39.53	0.24	33.41	15 48 12.70	15.92
	ξ Lupi, (2d *) . .	40	. .	. .	. .	37.7	39.0	40.2	41.7	42.9	. .	. .	. .	47 40.30	0.35	33.41	15 48 13.36	15.92
	Lacaille 6624 . .	41	24.8	27.2	28.7	40.3	41.4	42.9	44.4	45.5	56.9	58.3	0.8	50 42.84	0.28	33.41	15 51 15.97	15.88
	Lacaille 6648 . .	42	31.5	34.0	35.3	46.4	47.7	49.2	50.5	51.7	2.5	4.1	6.3	53 49.02	0.27	33.41	15 54 22.16	15.62
	β Scorpii	43	43.4	45.6	46.9	57.0	58.2	59.5	0.7	1.8	11.8	13.0	15.2	56 59.37	— 0.22	33.41	15 57 32.56	14.46
	B. A. C. 5330 . .	44	21.0	22.4	23.9	25.1	27.7	. .	31.4	33.9	35.1	36.3	37.9	56 59.47	+ 0.05	33.41	15 57 32.93	14.46
	O. Arg. S. 15292 .	45	39.7	42.2	43.4	54.1	55.3	56.6	58.0	59.1	9.6	11.0	13.3	0 56.57	— 0.25	33.42	16 1 29.74	15.16
	Weisse 38 . . .	46	38.3	40.4	41.6	51.6	52.7	53.8	55.0	56.1	6.1	7.3	9.4	2 53.85	0.20	33.42	16 3 27.07	13.95
	Weisse 111 . . .	47	17.0	19.2	20.4	30.0	31.1	32.4	33.6	34.6	44.2	45.5	47.5	6 32.32	0.19	33.42	16 7 5.55	13.68
	Lacaille 6818 . .	48	47.1	49.7	51.1	2.8	4.2	5.6	7.0	8.2	19.9	21.4	23.8	15 5.53	0.30	33.42	16 15 38.65	16.36
	α Scorpii . . .	49	15.0	17.4	18.6	29.4	30.5	31.9	33.3	34.4	44.9	46.3	48.5	20 31.84	0.25	33.43	16 21 5.02	15.30
	B. A. C. 5522 . .	†50	31.4	33.8	35.3	46.7	47.8	49.2	50.7	51.9	2.9	4.4	6.6	23 49.15	0.27	33.43	16 24 22.31	15.95
	B. A. C.5538 . .	51	34.9	37.6	38.7	50.8	51.9	53.4	54.9	56.0	7.7	9.1	11.7	26 53.34	0.30	33.43	16 27 26.47	— 16.48
	Radcliffe 3589 . .	52	36.3	46.7	53.2	44.9	50.7	56.8	53.5	7.7	59.4	6.3	16.6	32 56.55	0.19	33.43	16 33 29.79	+ 6.70
	B. A. C. 5671 . .	53	5.7	8.0	9.5	20.7	22.0	23.1	24.5	25.7	36.6	38.3	40.5	45 23.15	0.27	33.44	16 45 56.32	— 15.96
	κ Ophiuchi . . .	54	. .	. .	. .	53.3	54.7	56.5	. .	. .	15.1	16.3	17.8	51 5.62	24.39	33.44	16 51 14.67	12.02
	B. A. C. 5793 . .	55	17.8	20.3	21.6	33.0	34.3	35.8	37.3	38.5	49.6	51.0	53.3	3 35.68	— 0.28	+33.44	17 4 8.84	— 16.30

10. Machinery working badly.
50. Saw but one star.

June 16. n. = + 0.132 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 16, 12.7	+ 33.33	+ 0.026	— 0.165

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 16	B. A. C. 5809 . .	1	20.4	22.8	24.2	35.5	36.6	37.9	39.3	40.4	51.4	52.8	55.1	6 37.85	− 0.27	+33.45	17 7 11.03	− 16.01
	B. A. C. 5833 . .	2	..	..	..	11.4	12.9	15.4	32.7	35.4	37.0	38.3	39.9	10 27.88	30.29	33.45	17 10 31.04	16.18
	B. A. C. 5848 . .	3	..	..	..	51.2	52.5	53.7	55.1	56.3	..	..	..	12 53.76	0.32	33.45	17 13 26.89	16.07
Y.	B. A. C. 5892 . .	4	3.7	6.0	7.5	18.9	20.0	21.4	22.7	24.0	35.2	36.6	38.8	19 21.35	0.27	33.45	17 19 54.53	16.21
	Lacaille 7324 . .	5	59.2	1.7	3.1	14.7	16.0	17.3	18.6	19.8	31.3	33.0	35.2	22 17.26	0.29	33.45	17 22 50.42	16.55
	B. A. C. 5923 . .	6	59.1	1.6	3.0	14.5	15.7	17.0	18.3	19.7	30.8	32.3	34.8	25 16.98	0.28	33.45	17 25 50.15	16.39
	Lacaille 7362 . .	7	45.1	47.8	49.1	0.7	2.0	3.4	5.0	6.2	17.6	19.1	21.5	28 3.41	0.29	33.45	17 28 36.57	16.65
	Lacaille 7395 . .	8	10.8	13.4	14.8	26.2	27.5	28.9	30.4	31.5	43.0	44.5	46.8	32 28.89	0.29	33.46	17 33 2.06	16.57
	Lacaille 7414 . .	9	3.9	6.3	7.8	19.8	21.0	22.3	24.1	25.2	36.8	38.4	40.8	35 22.40	0.30	33.46	17 35 55.56	16.85
	Lacaille 7430 . .	10	55.2	57.7	59.0	10.7	12.0	13.5	14.9	16.0	27.6	29.1	31.5	38 13.38	0.29	33.46	17 38 46.55	16.67
	Lacaille 7459 . .	11	3.0	5.2	6.5	18.3	19.5	21.0	22.5	23.5	34.9	36.5	39.0	41 20.90	0.29	33.46	17 41 54.07	16.58
	B. A. C. 6051 . .	12	4.5	7.1	8.4	20.7	21.8	23.5	25.0	26.2	37.9	39.4	41.9	45 23.31	0.30	33.46	17 45 56.47	17.00
	Lacaille 7504 . .	13	..	..	..	56.6	58.1	59.7	1.2	2.6	14.7	16.4	19.0	48 6.04	6.74	33.46	17 48 32.76	17.44
	B. A. C. 6083 . .	14	45.4	47.9	49.3	1.4	2.7	4.0	5.6	6.8	18.5	20.1	22.5	52 4.02	0.30	33.46	17 52 37.18	16.99
	B. A. C. 6120 . .	15	20.0	22.3	23.7	34.6	35.9	37.1	38.5	39.7	50.5	51.8	54.0	57 37.10	0.26	33.47	17 58 10.31	15.86
	Lacaille 7595 . .	16	44.3	46.8	48.2	0.1	1.4	2.8	4.3	5.5	17.1	18.6	21.0	2 2.74	0.30	33.47	18 2 35.91	16.78
	μ Sagittarii . . .	17	49.1	51.4	52.5	..	..	5.2	6.5	7.6	17.8	19.1	21.2	5 5.60	0.63	33.47	18 5 38.44	− 14.97
	δ Ursæ Minoris . .	†18	54.0	28.5	48.0	31.0	49.0	9.0	29.0	45.5	24.5	47.0	19.0	16 7.68	0.56	33.47	18 16 40.59	+ 49.93
17	Sun I	19	21.8	24.1	25.5	35.9	37.0	38.3	39.7	40.7	51.0	52.4	54.7	40 38.28	..	..	..	..
N.	Sun II	20	39.6	41.9	43.0	53.6	54.8	56.0	57.4	58.6	8.9	10.4	12.5	42 56.06	..	..	..	..
	Polaris, S. P. . .	†21	4.0	..	19.5	28.5	..	..	..	..	..	..	..	31 34.00	− 23 3.26	33.61	1 9 4.35	− 63.29
	Lacaille 5724 . .	†22	11.2	12.9	14.7	16.0	19.2	..	..	..	..	..	..	44 14.80	+ 42.16	33.61	13 45 30.57	14.37
	Lacaille 5729 . .	23	7.4	9.8	11.2	22.9	24.2	25.7	27.0	28.3	39.9	41.3	43.7	45 25.58	− 0.29	33.61	13 45 58.90	14.15
	η Bootis	24	23.2	25.3	26.6	36.8	37.9	39.1	40.3	41.4	51.5	52.8	54.9	47 39.07	0.13	33.61	13 48 12.55	11.44
	Lacaille 5774 . .	25	..	..	..	3.6	5.1	7.2	24.3	26.9	28.3	29.6	31.2	50 19.52	29.64	33.61	13 50 23.49	13.83
	Lacaille 5812 . .	†26	56.8	59.5	0.8	13.0	14.3	15.9	17.5	18.6	30.4	31.9	34.4	57 15.74	0.31	33.61	13 57 49.04	14.58
	α Draconis . . .	27	34.3	39.0	41.8	4.7	7.2	10.0	12.8	15.2	37.6	40.6	45.1	0 9.85	0.11	33.61	14 0 43.35	7.39
	κ Virginis	28	50.0	52.1	53.3	3.0	4.1	5.3	6.5	7.6	17.2	18.5	20.4	5 5.27	0.19	33.61	14 5 38.69	12.87
	α Bootis	29	38.3	40.3	41.7	51.9	53.0	54.3	55.6	56.7	6.7	8.1	10.2	8 54.25	0.13	33.61	14 9 27.73	11.10
	Lacaille 5898 . .	30	..	..	..	54.3	55.6	57.0	58.4	59.7	..	..	..	11 57.00	0.35	33.61	14 12 30.26	14.60
	B. A. C. 4757 . .	31	20.1	22.4	23.8	35.6	36.8	38.3	39.6	40.8	52.3	53.9	56.3	13 38.17	0.29	33.61	14 14 11.49	14.64
	Lacaille 5923 . .	32	..	..	..	34.2	35.4	36.7	38.3	39.4	..	..	..	15 36.80	0.34	33.61	14 16 10.07	14.52
	Lacaille 5945 . .	33	27.0	29.4	30.7	..	..	..	..	..	59.5	1.0	3.4	18 45.17	0.25	33.61	14 19 18.53	14.78
	Lacaille 5967 . .	34	9.7	12.2	13.5	25.3	26.6	28.0	29.3	30.5	42.0	43.6	45.8	22 27.86	0.29	33.62	14 23 1.19	14.78
	5 Ursæ Minoris . .	35	16.7	25.7	30.3	11.0	15.5	20.3	25.8	29.8	9.8	15.3	23.2	27 20.31	0.16	33.62	14 27 53.77	1.83
	Lacaille 6040 .	†36	34.6	36.8	38.1	49.2	50.5	51.8	53.1	54.3	5.3	6.6	8.8	31 51.74	0.26	33.62	14 32 25.10	14.45
	Lacaille 6053 . .	†37	2.9	5.0	6.4	17.4	18.5	20.0	21.3	22.5	33.3	34.9	37.0	33 19.93	0.26	33.62	14 33 53.29	14.47
	ε Bootis	38	12.7	15.0	16.4	27.2	28.4	29.8	31.1	32.3	42.9	44.4	46.6	38 29.71	0.12	33.62	14 38 3.21	10.84
	α Libræ	39	32.9	34.9	36.2	46.1	47.3	48.6	49.7	50.7	0.6	1.9	4.0	42 48.45	0.21	33.62	14 43 21.86	13.54
	12 Libræ	40	..	..	..	51.1	52.2	53.5	54.9	55.9	..	..	..	45 53.52	0.29	33.62	14 46 26.85	14.24
	β Ursæ Minoris . .	41	40.4	48.5	52.7	29.1	33.4	37.5	42.8	46.2	22.3	27.0	34.3	50 37.65	0.14	33.62	14 51 11.13	1.98
	Lacaille 6229 . .	42	..	..	..	17.0	18.2	19.6	20.9	22.2	..	..	..	58 19.58	0.34	33.62	14 58 52.86	15.05
	Lacaille 6261 . .	43	15.4	17.8	19.4	31.7	33.0	34.3	35.8	37.1	49.2	50.7	52.8	3 34.29	0.31	33.62	15 4 7.60	15.77
	B. A. C. 5018 . .	44	16.8	19.0	20.3	31.3	32.4	33.7	35.0	36.3	46.9	48.4	50.6	6 33.70	0.26	33.62	15 7 7.06	14.77
	B. A. C. 5020 . .	45	..	..	..	12.2	13.6	15.9	32.6	35.1	36.6	37.7	39.4	7 27.89	29.09	33.62	15 7 32.42	14.75
	β Libræ	46	53.4	55.4	56.5	6.2	7.4	8.5	9.7	10.8	20.3	21.7	23.6	9 8.50	0.19	33.62	15 9 41.93	13.25
	B. A. C. 5111, (1st*)	†47	17.0	19.2	20.6	..	..	..	..	..	46.4	47.8	49.9	24 33.48	0.20	33.63	15 25 6.91	14.64
	B. A. C. 5111, (2d*)	†48	..	..	..	31.9	32.9	34.1	35.6	36.5	..	..	..	24 34.20	0.29	33.63	15 25 7.54	14.64
	α Cor. Borealis . .	49	6.0	8.2	9.5	20.4	21.6	22.9	24.3	25.4	36.0	37.5	39.6	28 22.85	0.12	33.63	15 28 56.36	10.75
	α Serpentis	50	..	..	..	59.0	0.1	1.3	2.5	3.5	13.0	14.5	16.4	37 6.26	5.17	33.63	15 37 34.72	12.27
	α Tauri	51	..	..	..	25.4	26.5	27.6	29.0	30.0	39.9	41.2	43.2	27 32.85	5.35	37.67	4 28 5.17	11.74
22	Sun I	52	5.6	8.0	9.1	19.8	20.7	22.1	23.5	24.6	34.9	36.1	38.5	1 22.08	0.13	37.73	6 1 59.68	..
	Sun II	53	23.4	25.6	27.0	37.6	38.8	40.0	41.2	42.4	52.5	53.9	56.2	3 39.87	0.13	37.73	6 4 17.47	..
	α Leonis	54	13.0	15.0	16.3	26.2	27.3	28.4	29.6	30.6	40.4	41.8	43.8	0 28.40	− 0.17	+37.88	10 1 6.11	− 11.36

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 17, 14.8	+ 33.62	+ 0.011	− 0.165

18. Unsteady.
21. Clouds.
22. Faint.
26. Faint and uncertain.
36–37. Hazy. (?)
47–48. Angle 205°; distance 14″.

June 17. n. = + 0.132.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
963.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
ne 22	γ Leonis	1	33.0	35.1	36.5	46.8	47.9	49.0	50.4	51.5	1.5	3.0	5.0	11 49.06	— 0.14	+37.89	10 12 26.81	— 11.78
	Moon I	†2	. .	. .	. .	. .	. .	35.9	. .	. .	. .	. .	26.7	49 31.30	41.49	37.91	10 49 27.72	. .
	ζ Virginis	3	52.9	55.0	56.0	19.6	21.0	23.0	37.8	40.1	41.3	42.6	43.8	27 23.01	15.28	38.01	13 27 45.74	12.05
N.	Polaris	†4	. .	10.0:	. .	. .	54.0	. .	. .	. .	. .	. .	. .	30 32.00	22 0.40	38.01	1 9 9.61	67.32
23	Sun I	5	14.3	16.5	17.8	28.4	29.6	30.9	32.2	33.3	43.7	45.0	47.1	5 30.80	0.16	38.54	6 6 9.18	. .
Y.	Sun II	6	32.0	34.3	35.6	46.2	47.3	48.6	49.9	51.0	1.3	2.8	4.8	7 48.53	0.16	38.54	6 8 27.23	. .
	α Canis Minoris	†7	. .	. .	. .	28.4	29.6	30.6	31.9	32.8	42.4	43.6	45.5	31 35.60	5.22	38.58	7 32 8.96	10.67
	δ Leonis	8	56.5	58.6	0.0	10.3	11.5	12.7	14.0	15.0	25.2	26.5	28.6	6 12.63	0.17	38.69	11 6 51.15	11.67
	Moon I	9	55.2	57.3	58.5	8.5	9.6	10.7	12.0	13.0	22.7	23.9	25.9	36 10.66	0.24	38.71	11 36 49.13	. .
	β Leonis	10	12.4	14.4	15.7	25.6	26.8	28.0	29.3	30.2	40.0	41.4	43.5	41 27.94	0.18	38.71	11 42 6.47	11.41
	β Libræ	11	1.2	2.2	3.3	4.6	5.6	.	33.5	35.7	37.3	38.4	39.7	9 20.15	— 17.06	38.81	15 9 41.90	13.24
	Radcliffe 3378	12	58.3	59.8	1.7	3.2	6.2	. .	22.1	25.1	26.5	28.1	29.8	18 44.08	+ 0.18	38.82	15 19 23.08	9.78
	μ Bootis	13	24.3	26.7	28.3	40.4	41.7	43.4	44.8	45.9	58.1	59.8	2.1	18 43.23	— 0.14	38.82	15 19 21.91	9.74
	O. Arg. N. 15370	14	. .	. .	. .	9.1	10.8	13.9	37.7	41.3	43.3	45.0	47.4	21 31.06	40.99	38.82	15 21 28.89	8.23
	α Cor. Borealis	15	0.9	3.1	4.4	15.1	16.2	17.8	19.1	20.1	30.9	32.4	34.4	28 17.65	0.16	38.82	15 28 56.31	10.72
	Radcliffe 3415	16	8.9	11.5	13.0	. .	. .	. .	. .	. .	43.8	45.5	48.4	30 28.52	0.08	38.82	15 31 7.26	9.47
	Radcliffe 3416	17	. .	. .	. .	31.4	32.7	34.4	35.8	36.9	. .	. .	. .	30 34.24	0.19	38.82	15 31 12.87	9.47
	η Libræ	18	31.9	34.0	35.2	45.3	46.3	47.5	48.6	49.6	59.6	1.0	2.9	35 47.45	0.29	38.83	15 36 25.99	— 13.94
	ζ Ursæ Minoris	19	11.7	22.4	27.9	14.4	20.0	25.6	31.5	36.5	23.3	29.4	38.8	48 25.59	0.17	38.83	15 49 4.25	+ 4.00
	β Scorpii	20	38.0	40.2	41.3	51.7	52.8	54.0	55.4	56.4	6.5	7.9	9.9	56 54.01	0.32	38.84	15 57 32.53	— 14.47
	Weisse 38	21	33.1	35.3	36.4	46.4	47.4	48.5	49.5	50.4	0.5	1.8	3.7	2 48.45	0.27	38.84	16 3 27.02	13.96
	Weisse 111	22	11.9	13.8	15.1	24.8	25.9	27.0	28.2	29.3	39.0	40.2	42.2	6 27.04	0.27	38.84	16 7 5.61	— 13.69
	Radcliffe 3589	23	30.0	41.2	48.0	39.6	45.5	52.2	57.5	3.3	53.8	1.4	11.6	32 51.28	0.18	38.85	16 33 29.95	+ 7.04
	B. A. C. 5623	24	3.5	5.8	7.1	17.8	19.0	20.2	21.3	22.7	32.9	34.2	36.5	39 20.11	0.34	38.86	16 39 58.63	— 15.25
	22 Ophiuchi	25	43.8	46.0	47.1	57.6	58.8	0.0	1.2	2.3	12.8	14.0	16.2	45 59.98	0.34	38.86	16 46 38.50	15.16
	κ Ophiuchi	26	20.8	22.8	24.0	33.8	34.9	36.2	37.4	38.4	48.0	49.2	51.1	50 36.06	0.20	38.86	16 51 14.72	— 12.06
	ε Ursæ Minoris	27	42.8	57.3	5.4	17.6	24.5	33.4	43.0	50.1	0.7	10.0	24.9	59 33.61	0.24	38.87	17 0 12.24	+ 15.26
	Schwerd 1014	28	24.7	35.1	40.2	27.8	32.7	39.4	44.7	49.9	36.6	43.0	52.5	6 38.78	0.17	38.87	17 7 17.48	+ 6.01
	ξ Ophiuchi	29	57.2	59.4	0.6	11.0	12.1	13.5	14.6	15.7	25.9	27.2	29.4	12 13.33	0.32	38.87	17 12 51.88	— 15.00
	* — 24° 3′	30	. .	. .	. .	7.4	8.3	9.7	10.9	12.2	. .	. .	. .	16 9.70	0.39	38.88	17 16 48.19	— 15.36
	b Ophiuchi	31	9.6	11.9	13.1	23.7	24.8	26.2	27.5	28.4	39.0	40.2	42.4	17 26.07	0.34	38.88	17 18 4.61	15.36
	O. Arg. N. 17136	32	6.5	16.2	21.6	6.0	11.3	16.5	21.9	26.5	11.3	15.5	25.0	20 16.21	0.16	38.88	17 20 54.93	+ 4.94
	α Ophiuchi	33	43.9	46.1	47.3	57.3	58.3	59.5	0.7	1.6	11.4	12.8	14.6	27 59.41	0.19	38.88	17 28 38.10	— 11.91
29 N.	B. A. C. 5117	34	. .	. .	18.7	34.9	51.6	8.2	24.6	40.9	57.7	. .	. .	25 8.09	0.35	43.26	· 15 25 51.00	14.68
	α Cor. Borealis	35	. .	. .	. .	. .	. .	13.5	30.2	46.9	4.0	. .	. .	28 38.65	25.56	43.26	15 28 56.35	10.68
	δ Scorpii	36	. .	. .	46.9	2.8	19.3	35.5	51.6	7.7	24.0	. .	. .	51 35.40	0.33	43.27	15 52 18.34	14.69
	β Scorpii	37	. .	. .	1.9	17.7	33.8	49.8	5.6	21.3	37.4	. .	. .	56 49.64	— 0.32	43.27	15 57 32.59	14.46
	B. A. C. 5389	38	. .	. .	38.5	55.3	12.8	29.9	. .	3.8	21.1	. .	. .	4 26.90	+ 2.48	43.27	16 5 12.65	15.50
	σ Scorpii	39	. .	. .	. .	39.9	56.6	13.4	29.8	46.3	. .	. .	. .	12 13.20	— 0.33	43.27	16 12 56.14	15.18
	α Scorpii	40	. .	. .	. .	. .	5.4	22.2	38.8	55.5	. .	. .	. .	20 38.78	17.08	43.27	16 21 4.97	15.34
	ζ Herculis	41	. .	. .	. .	52.0	9.9	27.7	45.1	2.8	. .	. .	. .	35 27.50	0.23	43.28	16 36 10.55	9.99
	κ Ophiuchi	42	. .	. .	46.1	1.0	16.5	31.8	46.8	2.0	17.3	. .	. .	50 31.64	— 0.25	43.28	16 51 14.67	12.06
	Moon I	43	. .	. .	50.7	7.0	. .	. .	. .	. .	. .	. .	. .	22 58.85	+ 41.71	43.29	17 24 23.85	. .
30 Y.	α Coronæ Borealis	44	56.1	58.4	59.6	10.5	11.7	13.2	14.5	15.6	26.3	27.6	29.9	28 13.04	— 0.33	43.60	15 28 56.31	10.67
	B. A. C. 5184, (1st *)	45	9.2	11.3	12.4	. .	. .	. .	. .	. .	36.9	38.3	. .	34 21.62	+ 2.77	43.60	15 35 7.99	13.94
	* — 15° 58′	46	50.1	52.3	53.5	3.5	4.6	5.8	7.0	8.1	18.0	. .	. .	36 2.66	2.85	43.60	15 36 49.11	13.98
	B. A. C. 5281	47	45.0	47.2	48.5	58.8	0.0	1.1	2.5	3.4	13.7	. .	. .	48 57.80	2.92	43.60	15 49 44.32	14.49
	δ Scorpii	48	18.7	21.[illegible]	22.3	32.8	34.0	35.2	. .	. .	47.8	49.3	51.3	51 34.73	+ 0.02	43.60	15 52 18.35	14.68
	* — 11° 29′	49	56.9	59.0	0.3	10.2	11.3	12.4	13.7	14.7	24.4	25.6	27.4	56 12.35	— 0.36	43.60	15 56 55.59	13.73
	11 Scorpii	50	5.2	7.5	8.6	18.5	19.6	20.8	22.0	23.0	32.9	34.0	36.0	59 20.74	0.36	43.60	16 0 3.98	13.83
	* — 21° 15′	†51	. .	. .	. .	8.7	10.0	12.2	28.3	30.6	31.9	33.0	34.6	2 23.66	27.95	43.60	16 2 39.31	14.68
	* — 4° 54′	†52	56.4	58.5	59.5	9.3	10.3	11.5	12.7	13.7	23.2	24.5	26.4	41 11.45	0.35	43.60	16 41 54.70	13.36
	Weisse 792	53	38.6	39.8	41.2	42.4	44.8	. .	45.2	47.5	48.6	49.8	51.3	41 14.92	0.10	43.60	16 41 58.42	13.36
	B. A. C. 5678	54	. .	. .	. .	40.4	41.6	43.0	44.5	45.6	. .	. .	. .	45 43.02	— 0.50	+43.60	16 46 26.12	— 16.13

2. Observed over D_3 and wire 7. 7. Faint; through clouds.
4. Cloudy. 51. Faint; machinery breaks down. 52. On fillet.

r.
June 23, 9h. 40m. Image west 0.33. Clamp west.
Image east 0.35. Clamp east.
Image west 0.49. Clamp west.
Readings discrepant but satisfactory. Instrument jerked during second reversal.
June 30, 18h. 40m. Image west 0.49. Clamp west.
Image east 0.37. Clamp east.
Reduced the collimation error.
June 30, 19h. 5m. Image west 0.10. Clamp east.
Image west 0.02. Clamp west.

s.
June 21–22. n. = + 0.277.
23. 0.200.
29–30. + 0.100.

June 29. Observations made with eye and ear, using clock-beat. Night cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
June 22, 9.5	+ 37.86	+ 0.038	— 0.230
23, 14.4	38.79	0.030	. .
29, 16.2	43.27	0.014	— 0.334
30, 16.6	+ 43.60	+ 0.000	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.	
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.
[illegible] June 30	* — 31° 12′	1	. .	. .	. .	5.2	6.4	7.7	9.1	10.4	. .	. .	. .	46 7.76	— 0.50	+43.60	16 46 50.86
	* — 31° 14′	2	34.1	36.4	37.8	49.2	50.4	51.7	53.2	54.3	5.4	6.8	9.2	46 51.68	0.45	43.60	16 47 34.83
	α Ophiuchi	3	. .	. .	. .	43.2	44.5	46.4	1.6	4.0	5.1	6.3	7.8	50 57.36	26.36	43.60	16 51 14.60
Y.	O. Arg. S. 16298	4	2.1	4.4	5.7	16.4	17.5	18.9	20.2	21.2	31.9	33.1	35.3	56 18.79	0.42	43.60	16 57 1.97
	B. A. C. 5771	5	22.9	25.0	26.2	36.4	37.4	38.7	40.0	41.0	51.0	52.2	54.4	59 38.65	0.38	43.60	17 0 21.87
	O. Arg. N. 16862	6	51.7	54.9	56.6	12.1	13.7	15.6	17.5	19.0	34.3	36.3	39.5	4 15.56	0.41	43.60	17 4 58.75
	α Herculis	7	28.8	31.0	32.2	42.1	43.2	44.4	45.6	46.7	56.4	57.6	59.7	7 44.34	— 0.32	43.60	17 8 27.62
July 1	Moon II	†8	54.8	57.1	58.3	8.6	9.8	11.0	12.4	13.6	23.9	25.2	27.4	40 11.10	+ 0.07	43.34	19 40 54.51
N.	α Aquilæ	9	. .	. .	. .	38.1	39.4	41.4	56.4	58.7	59.9	1.1	2.5	43 52.19	— 25.91	43.34	19 44 9.62
Y.	α Tauri	†10	6.0	8.3	9.4	19.6	20.7	21.9	23.2	24.2	34.0	35.3	37.4	27 21.82	+ 0.05	43.53	4 28 5.40
2	Sun I	11	28.8	31.0	32.3	42.8	43.9	45.2	46.5	47.6	57.9	59.3	1.5	42 45.16	0.05	43.50	6 43 28.71
	Sun II	12	46.1	48.2	49.5	. .	. .	. .	. .	. .	. .	. .	. .	44 47.93	14.54	43.50	6 45 45.97
	ρ Capricorni	13	7.3	9.5	10.8	. .	. .	. .	. .	. .	. .	. .	. .	20 9.20	14.06	43.33	20 21 6.59
	α Cygni	14	44.7	47.6	49.3	2.9	4.3	6.0	7.6	9.2	22.5	24.4	27.0	36 5.95	0.06	43.32	20 36 49.33
	Moon II	15	36.0	37.5	38.9	40.1	42.7	58.8	0.8	2.1	27.2	28.5	30.5	42 58.46	16.30	43.32	20 43 58.08
	ζ Cygni	16	9.1	11.4	12.9	23.9	25.1	26.5	27.9	29.1	40.0	41.4	43.7	6 26.45	0.05	43.32	21 7 9.82
	α Cephei	17	6.7	11.3	13.7	34.2	36.6	39.1	41.5	43.6	3.7	6.5	10.6	15 38.86	0.09	43.31	21 16 22.26
	β Aquarii	18	25.8	27.9	29.1	38.7	39.8	40.9	42.2	43.2	52.7	54.0	56.0	24 40.94	0.06	43.31	21 25 24.31
	β Cephei	19	29.9	35.5	38.8	7.3	10.2	13.7	17.1	20.4	47.8	51.5	57.3	26 13.59	+ 0.12	43.31	21 26 57.02
	β Cephei, (Comp.)	20	. .	. .	. .	. .	. .	.	38.4	45.0	48.5	52.1	56.2	27 48.04	— 1 36.64	43.31	21 26 54.71
	ζ Aquarii	21	. .	. .	. .	45.5	46.5	47.7	49.0	49.9	59.5	0.8	2.7	29 52.70	— 4.98	43.31	21 30 31.03
3	α Tauri	†22	7.0	9.2	10.3	20.4	21.5	22.7	23.9	25.0	35.0	36.3	38.3	27 22.69	+ 0.05	. .	. . . .
8	ζ Ophiuchi	23	43.9	45.9	47.2	57.0	58.0	59.1	0.5	1.5	11.0	12.4	14.3	29 2.16	+ 0.10	38.64	16 29 40.90
N.	ζ Herculis	†24	. .	. .	. .	29.0	30.4	31.8	33.1	34.3	45.5	47.0	49.3	35 37.55	— 5.77	38.63	16 36 10.41
	Lacaille 6999, (1st *)	†25	53.6	56.1	57.6	. .	. .	. .	. .	. .	27.1	28.7	31.1	41 12.37	+ 0.17	38.63	16 41 51.17
	Lacaille 6999, (2d *)	†26	. .	. .	. .	9.8	11.0	12.4	14.1	15.5	. .	. .	. .	41 12.56	0.07	38.63	16 41 51.26
	Lacaille 7011	†27	28.7	31.3	32.8	44.9	46.3	47.7	49.3	50.5	2.5	4.1	6.5	42 47.69	+ 0.12	38.63	16 43 26.44
	Lacaille 7065	28	. .	. .	.	59.7	0.9	2.5	4.0	5.1	17.2	18.8	21.3	49 8.69	— 6.15	38.62	16 49 41.16
	O. Arg. S. 16284	29	27.0	29.3	30.7	41.3	42.5	43.8	45.1	46.2	56.7	58.0	0.2	55 43.71	+ 0.11	38.62	16 56 22.44
	ε Ursæ Minoris	30	. .	. .	. .	15.0	22.5	32.0	40.7	48.0	. .	. .	. .	59 31.64	0.26	38.61	17 0 10.51
	Lacaille 7163	31	56.8	59.3	0.9	13.0	14.3	15.7	17.3	18.6	30.6	32.4	34.8	3 15.79	0.12	38.61	17 3 54.52
	α Herculis	32	33.3	35.3	36.7	46.6	47.7	49.0	50.2	51.2	1.0	2.2	4.3	7 48.86	0.09	38.61	17 8 27.56
	b Ophiuchi	†33	9.7	11.9	13.1	23.7	24.9	26.1	27.4	28.6	39.0	40.3	42.4	17 26.10	0.11	38.60	17 18 4.81
	Lacaille 7312	†34	12.1	14.5	15.9	27.5	28.8	30.2	31.7	32.9	44.2	45.8	48.1	20 30.15	0.12	38.60	17 21 8.87
	Lacaille 7324	†35	54.0	56.3	57.8	9.2	10.5	12.0	13.5	14.6	26.0	27.5	29.8	22 11.93	0.12	38.60	17 22 50.65
	Lacaille 7349	36	30.6	33.2	34.5	46.8	48.2	49.8	51.4	52.5	4.4	5.9	8.4	25 49.61	0.12	38.59	17 26 28.32
	Lacaille 7357	37	36.4	39.2	40.5	52.8	54.2	55.6	57.2	58.4	10.4	12.0	14.5	27 55.56	0.12	38.59	17 28 34.27
	γ^2 Sagittarii	38	9.1	11.5	12.9	24.0	25.2	26.6	28.0	29.2	40.1	41.5	43.9	56 26.55	0.11	38.57	17 57 5.23
	* — 37° 39′	39	55.3	57.6	59.3	11.4	12.8	14.3	15.8	17.0	29.0	30.5	33.0	4 14.18	0.12	38.57	18 4 52.87
	Lacaille 7661	40	. .	. .	. .	29.3	30.6	32.2	33.5	34.8	. .	. .	. .	10 32.08	0.06	38.56	18 11 10.70
	η Serpentis	41	23.6	25.5	26.8	36.4	37.5	38.7	40.0	41.0	50.2	51.6	53.5	13 38.62	+ 0.09	38.56	18 14 17.27
	δ Ursæ Minoris	42	. .	. .	. .	. .	38.5	59.8	19.3	36.2	. .	. .	. .	16 8.45	— 8.81	38.56	18 16 38.20
	B. A. C. 6295	43	40.0	42.3	43.7	54.7	55.8	57.2	58.6	59.8	10.6	12.0	14.2	22 57.17	+ 0.11	38.55	18 23 35.83
	α Lyræ	44	23.6	26.1	27.6	40.0	41.2	42.7	44.4	45.6	57.6	59.4	2.0	31 42.75	+ 0.11	38.55	18 32 22.41
	51 Cephei, S. P.	45	. .	.	. .	14.0	54.0	30.5	4.0	43.0	. .	. .	. .	34 29.10	— 0.73	38.54	6 35 6.91
	η Piscium	46	. .	. .	. .	. .	. .	. .	4.5	7.0	8.2	9.4	10.8	24 7.98	34.17	38.24	1 24 12.05
	Polaris	47	. .	. .	. .	. .	. .	. .	. .	. .	12.0	56.5	55.0	32 1.17	+ 23 12.80	38.24	1 9 26.61
	ο Piscium	48	18.7	20.8	21.9	31.8	32.8	34.0	35.2	36.3	45.8	47.1	49.0	37 33.95	+ 0.09	38.23	1 38 12.27
	β Arietis	49	12.9	15.0	16.3	26.6	27.7	28.9	30.2	31.3	41.4	42.8	44.9	46 28.91	0.09	38.23	1 47 7.23
	α Arietis	50	35.3	37.5	38.8	49.3	50.5	51.7	53.0	54.1	4.3	5.8	7.9	58 51.65	0.10	38.22	1 59 29.97
	ξ^1 Ceti	51	53.4	55.5	56.7	6.3	7.5	8.6	9.9	10.9	20.4	21.8	23.7	5 8.61	0.09	38.22	2 5 46.92
	Moon II	52	52.9	55.2	56.4	6.6	7.7	9.0	10.2	11.3	21.3	22.6	24.8	9 8.91	0.09	38.21	2 9 47.21
	ξ^2 Ceti	53	1.6	3.6	4.8	14.4	15.5	16.7	18.0	19.0	28.5	29.9	31.8	20 16.71	+ 0.09	+38.20	2 20 55.00

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 1, 19.7	+ 43.34	0.000	+ 0.055
2, 17.8	43.36	— 0.013	. .
8, 20.5	+ 38.46	— 0.044	+ 0.092

8. Morse register.
10. Morse register.
22. No data for reduction.
24. C unreliable; D good.
25–26. Distance 12″; angle 277°.
27. Perhaps 1s. large.
33. Seconds assumed.
34. Seconds assumed.
35. Seconds doubtful.

s.
July 1–2. n. = — 0.015.
8. — 0.010.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	IX.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
ly 9	Sun I	1	22. 4	24. 5	25. 7	36. 1	37. 0	38. 5	39. 7	40. 7	51. 3	52. 5	54. 8	11 38. 47	+ 0. 09	+37. 89	7 12 16. 45	. .
Y.	Sun II	2	38. 9	41. 0	42. 3	52. 8	53. 9	55. 1	56. 4	57. 5	7. 9	9. 2	11. 5	13 55. 14	0. 09	37. 89	7 14 33. 12	. .
	ζ Herculis	3	14. 8	17. 4	18. 6	30. 1	31. 4	32. 8	34. 1	35. 4	46. 3	47. 9	50. 1	35 32. 63	+ 0. 08	37. 72	16 36 10. 43	— 9. 93
	18 Ophiuchi	†4	. .	. .	. .	48. 4	49. 5	50. 8	52. 2	53. 3	3. 8	5. 0	7. 2	40 56. 28	— 5. 33	37. 71	16 41 28. 66	15. 27
	κ Ophiuchi	5	21. 6	23. 6	24. 8	34. 7	35. 7	36. 9	38. 2	39. 1	48. 7	50. 0	51. 9	50 36. 84	+ 0. 09	37. 71	16 51 14. 64	12. 05
	B. A. C. 5743	6	20. 9	23. 1	24. 3	34. 9	35. 9	37. 2	38. 5	39. 6	49. 9	51. 2	53. 5	55 37. 18	0. 13	37. 71	16 56 15. 02	15. 22
	η Ophiuchi	7	42. 3	44. 3	45. 5	55. 5	56. 7	57. 8	59. 0	0. 0	9. 9	11. 1	13. 2	1 57. 75	0. 12	37. 70	17 2 35. 57	14. 44
	B. A. C. 5809	†8	16. 0	18. 1	19. 6	30. 6	32. 2	33. 4	34. 7	35. 8	46. 5	. .	50. 7	6 31. 76	1. 60	37. 70	17 7 11. 06	16. 12
	b Ophiuchi	9	10. 6	12. 8	14. 0	24. 6	25. 8	27. 0	28. 3	29. 5	39. 7	41. 3	43. 6	17 27. 02	+ 0. 13	37. 69	17 18 4. 84	15. 43
	σ Ophiuchi	10	. .	. .	. .	. .	. .	. .	38. 9	41. 4	42. 5	43. 8	45. 2	19 42. 36	— 33. 16	37. 69	17 19 46. 89	12. 65
	c² Ophiuchi	11	13. 6	16. 0	17. 3	27. 7	29. 0	30. 2	31. 6	32. 7	43. 0	44. 3	46. 5	22 30. 17	+ 0. 13	37. 69	17 23 7. 99	15. 42
	ν¹ Draconis	12	50. 0	52. 5	54. 7	56. 8	1. 1	. .	46. 5	50. 4	52. 8	54. 8	57. 4	28 53. 70	0. 53	37. 68	17 29 31. 91	6. 58
	ν² Draconis	13	33. 3	36. 8	38. 6	55. 1	57. 1	59. 4	1. 6	3. 3	20. 0	22. 4	25. 7	28 59. 39	0. 09	37. 68	17 29 37. 16	6. 59
	ο Serpentis	14	53. 8	56. 0	57. 2	7. 1	8. 2	9. 5	10. 7	11. 7	21. 3	22. 8	24. 7	33 9. 36	0. 11	37. 68	17 33 47. 15	14. 27
	β Ophiuchi	15	53. 3	55. 4	56. 5	6. 3	7. 3	8. 6	9. 7	10. 6	20. 2	21. 4	23. 3	36 8. 42	0. 09	37. 67	17 36 46. 18	12. 66
	γ Ophiuchi	16	12. 5	14. 5	15. 7	25. 3	26. 5	27. 7	28. 9	29. 9	39. 3	40. 4	42. 5	40 27. 56	0. 10	37. 67	17 41 5. 33	12. 84
	* — 25° 47′	17	25. 6	27. 8	29. 0	39. 3	40. 4	41. 6	42. 8	43. 9	54. 0	55. 5	57. 4	43 41. 57	0. 14	37. 67	17 44 19. 38	15. 72
	μ Sagittarii	18	44. 8	47. 0	48. 1	58. 6	59. 7	1. 0	2. 4	3. 3	13. 4	14. 8	16. 9	5 0. 91	0. 13	37. 66	18 5 38. 70	15. 21
	* — 18° 40′	19	. .	. .	. .	52. 0	53. 2	54. 4	55. 6	56. 7	. .	. .	. .	6 54. 38	0. 07	37. 66	18 7 32. 21	14. 94
	O. Arg. S. 18015	20	51. 3	53. 4	54. 6	. .	. .	. .	. .	. .	19. 3	20. 7	23. 0	10 7. 05	0. 16	37. 65	18 10 44. 86	14. 94
	O. Arg. S. 18017	21	. .	. .	. .	5. 7	7. 0	8. 1	9. 2	10. 5	. .	. .	. .	10 8. 10	0. 07	37. 65	18 10 45. 82	14. 94
	* — 15° 9′	22	11. 9	13. 0	14. 4	15. 8	18. 2	. .	20. 4	22. 7	24. 0	25. 3	26. 7	13 49. 24	0. 38	37. 65	18 14 27. 27	14. 58
	O. Arg. S., 18115	23	34. 5	36. 5	37. 8	47. 8	48. 9	50. 2	51. 3	52. 4	2. 3	3. 5	5. 4	13 50. 05	+ 0. 12	37. 65	18 14 27. 82	— 14. 58
	δ Ursæ Minoris	24	. .	. .	. .	. .	. .	. .	21. 5	39. 0	18. 5	40. 0	12. 5	18 26. 30	— 2 25. 07	37. 65	18 16 38. 88	+ 51. 72
	1 Aquilæ	25	56. 3	58. 4	59. 5	9. 3	10. 4	11. 6	12. 8	13. 7	23. 4	24. 7	26. 7	27 11. 53	+ 0. 11	37. 64	18 27 49. 28	— 13. 90
	B. A. C. 6346	26	53. 6	55. 9	57. 0	7. 6	8. 8	10. 0	11. 4	12. 4	22. 7	24. 1	26. 4	30 9. 99	0. 13	37. 64	18 30 47. 76	15. 46
	51 Cephei, S. P.	27	. .	. .	. .	15. 0	54. 0	30. 0	3. 5	44. 0	. .	. .	. .	34 29. 30	0. 16	37. 64	18 35 7. 10	88. 24
	O. Arg. S. 18735	28	46. 7	49. 0	50. 2	0. 8	1. 8	3. 1	4. 3	5. 3	15. 7	17. 2	19. 2	42 3. 03	0. 13	37. 63	18 42 40. 79	15. 33
	σ Sagittarii	29	56. 2	58. 5	59. 7	10. 5	11. 7	12. 9	14. 4	15. 4	26. 1	27. 6	29. 7	46 12. 97	0. 14	37. 63	18 46 50. 74	15. 81
	α Ceti	†30	16. 9	18. 9	20. 0	29. 7	30. 8	31. 9	33. 1	34. 0	43. 7	45. 0	46. 9	54 31. 90	0. 10	37. 31	2 55 9. 31	11. 43
	Moon II	†31	25. 0	27. 1	28. 3	38. 8	39. 9	41. 2	42. 5	43. 6	53. 9	55. 1	57. 2	1 41. 15	0. 09	37. 30	3 2 18. 54	. .
	α Tauri	32	. .	14. 9	16. 1	26. 2	27. 3	28. 5	29. 6	30. 7	40. 6	42. 0	. .	27 28. 43	0. 08	37. 14	4 28 5. 65	12. 16
10	β Scorpii	33	39. 7	41. 9	43. 1	53. 3	54. 4	55. 7	56. 9	57. 9	8. 1	9. 5	11. 5	56 55. 64	0. 12	36. 72	15 57 32. 48	14. 41
N.	ν Scorpii	34	13. 4	15. 6	16. 8	27. 0	28. 2	29. 4	30. 7	31. 7	41. 8	43. 1	45. 1	3 29. 35	0. 12	36. 72	16 4 6. 19	14. 44
	B. A. C. 5409	35	6. 1	8. 5	9. 8	20. 6	21. 8	23. 0	24. 4	25. 5	36. 3	37. 7	39. 8	6 23. 05	0. 13	36. 71	16 6 59. 89	15. 27
	B. A. C. 5429	36	58. 9	1. 1	2. 5	13. 5	14. 7	15. 9	17. 3	18. 5	29. 2	30. 6	32. 8	9 15. 91	+ 0. 13	36. 71	16 9 52. 75	15. 46
	B. A. C. 5457	37	. .	. .	. .	. .	. .	. .	29. 3	32. 3	33. 7	35. 1	37. 0	15 33. 48	— 41. 49	36. 71	16 15 28. 70	16. 69
	B. A. C. 5487	38	6. 0	8. 4	9. 8	20. 8	22. 0	23. 4	24. 8	26. 0	36. 8	38. 2	40. 4	18 23. 33	+ 0. 14	36. 71	16 19 0. 18	15. 62
	α Scorpii	39	11. 4	13. 6	15. 0	25. 8	26. 9	28. 2	29. 6	30. 7	41. 3	42. 7	44. 8	20 28. 18	0. 13	36. 71	16 21 5. 02	15. 32
	B. A. C. 5518	40	1. 0	3. 3	4. 6	15. 7	16. 9	18. 2	19. 6	20. 8	31. 4	33. 0	35. 1	23 18. 15	0. 14	36. 70	16 23 54. 99	15. 64
	A Draconis	41	59. 3	4. 7	8. 1	35. 2	38. 1	41. 3	44. 7	47. 7	14. 0	17. 5	23. 3	27 41. 26	0. 22	36. 70	16 28 18. 18	2. 05
	B. A. C. 5564	42	52. 6	55. 0	56. 2	7. 0	8. 1	9. 3	10. 7	11. 8	22. 4	23. 7	25. 8	31 9. 33	0. 13	36. 70	16 31 46. 16	15. 36
	ζ Herculis	43	16. 0	18. 3	19. 7	30. 9	32. 2	33. 6	35. 0	36. 2	47. 4	48. 9	51. 1	35 33. 57	0. 11	36. 70	16 36 10. 38	9. 92
	25 Scorpii	44	39. 2	41. 5	42. 8	53. 5	54. 6	56. 0	57. 3	58. 4	8. 9	10. 2	12. 4	37 55. 89	0. 14	36. 69	16 38 32. 72	15. 35
	Lacaille 6999 (1st *)	45	55. 4	57. 8	59. 5	11. 6	12. 9	14. 3	16. 0	17. 2	29. 0	30. 5	33. 0	41 14. 29	0. 15	36. 69	16 41 51. 13	16. 97
	Lacaille 6999 (2d *)	46	28. 6	30. 3	31. 8	33. 4	36. 4	. .	51. 9	54. 8	56. 2	57. 6	59. 5	41 14. 05	0. 46	36. 69	16 41 51. 20	16. 97
	Lacaille 7011	47	. .	. .	. .	46. 9	48. 2	49. 7	51. 1	52. 6	. .	. .	. .	42 49. 70	0. 10	36. 69	16 43 26. 49	16. 99
	Lacaille 7065	48	45. 3	48. 0	49. 4	1. 5	2. 8	4. 3	5. 9	7. 1	19. 0	20. 7	23. 1	49 4. 28	0. 16	36. 69	16 49 41. 13	17. 05
	Lalande 30963	49	. .	. .	. .	0. 3	1. 5	2. 8	4. 2	5. 3	. .	. .	. .	55 2. 82	0. 08	36. 68	16 55 39. 58	15. 49
	O. Arg. S. 16284	50	29. 0	31. 3	32. 5	43. 2	44. 4	45. 7	47. 0	48. 2	58. 6	0. 0	2. 3	55 45. 65	+ 0. 13	36. 68	16 56 22. 46	— 15. 48
	ε Ursæ Minoris	51	. .	. .	. .	. .	23. 9	32. 7	41. 8	48. 8	. .	. .	. .	59 36. 80	— 3. 93	36. 68	17 0 9. 55	+ 16. 81
	B. A. C. 5792	52	1. 2	3. 6	5. 0	15. 7	17. 0	18. 3	19. 7	20. 8	31. 6	32. 9	35. 1	3 18. 26	+ 0. 13	36. 68	17 3 55. 07	— 15. 79
	B. A. C. 5796	53	38. 0	40. 2	41. 5	52. 4	53. 6	54. 9	56. 2	57. 4	8. 0	9. 5	11. 7	4 54. 85	+ 0. 13	36. 68	17 5 31. 66	15. 80
	α Herculis	54	. .	. .	. .	. .	. .	. .	21. 6	24. 1	25. 3	26. 5	28. 0	8 25. 10	— 34. 15	36. 68	17 8 27. 63	11. 73
	B. A. C. 5861	55	. .	. .	. .	9. 3	10. 5	11. 8	13. 3	14. 4	. .	. .	. .	15 11. 86	+ 0. 08	+36. 67	17 15 48. 61	— 15. 97

4. Faint.
8. Faint.
30. Steady.
31. Steady.
July 9, 18h. 55m. Image east 0. 15. Clamp west.

July 9. n. = — 0. 060. (s.)
10. — 0. 030.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 9, 19. 3	+ 37. 61	— 0. 040	+ 0. 099
10, 15. 4	+ 36. 74	— 0. 037	+ 0. 105

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. July 10	B. A. C. 5878 . .	1	37.7	40.0	41.2	52.0	53.2	54.5	55.8	56.9	7.8	8.9	11.0	17 54.42	+ 0.13	+36.67	17 18 31.22	− 15.64
	Lacaille 7312 . .	2	14.0	16.4	17.9	29.5	30.8	32.2	33.5	34.8	46.1	47.7	50.0	20 32.08	0.14	36.67	17 21 8.89	16.69
	Lacaille 7324 . .	3	55.9	58.3	59.7	11.3	12.5	14.0	15.5	16.6	27.8	29.5	31.7	22 13.89	+ 0.14	36.67	17 22 50.70	16.69
N.	B. A. C. 5923 . .	4	. .	. .	. .	11.0	12.4	13.7	15.1	16.3	27.6	29.0	31.3	25 19.55	− 5.77	36.66	17 25 50.44	16.54
	α Ophiuchi . . .	5	46.0	48.0	49.2	59.1	0.3	1.4	2.7	3.7	13.4	14.7	16.7	28 1.38	+ 0.10	36.66	17 28 38.14	11.96
	κ Scorpii . . .	6	9.7	12.4	13.8	26.3	27.6	29.1	30.7	32.0	44.2	45.8	48.3	32 29.08	+ 0.16	36.66	17 33 5.90	17.58
	Lacaille 7414 . .	7	. .	. .	. .	. .	. .	. .	55.7	58.5	0.1	1.4	3.1	35 59.76	− 40.55	36.66	17 35 55.87	17.03
	μ Herculis . . .	8	15.5	17.8	19.0	30.0	31.2	32.5	33.9	35.0	45.7	47.3	49.4	40 32.48	+ 0.10	36.66	17 41 9.24	− 10.45
	Ψ^1 Draconis . . .	9	. .	6.4	10.1	. .	45.2	49.0	53.3	. .	27.6	31.5	. .	43 49.01	0.13	36.65	17 44 25.79	+ 0.09
	γ^2 Sagittarii . . .	10	11.0	13.3	14.6	25.8	27.1	28.4	29.8	31.0	42.0	43.4	45.8	56 28.38	0.14	36.65	17 57 5.17	− 16.26
	Lacaille 7646 . .	11	41.4	43.8	45.2	56.8	58.0	59.5	1.0	2.2	13.8	15.2	17.7	7 59.51	0.15	36.64	18 8 36.30	− 16.90
	δ Ursæ Minoris . .	12	. .	. .	. .	23.0	41.5	1.5	22.0	38.0	. .	. .	. .	16 1.20	0.47	36.63	18 16 38.30	+ 51.88
15	Sun I	†13	54.5	56.6	58.0	8.3	9.5	10.7	12.1	13.1	23.1	24.6	26.9	36 10.67	. .	. .	. . . . .	. .
	Sun II	†14	10.3	12.5	13.8	24.1	25.4	26.5	27.9	29.0	39.1	40.6	42.7	38 26.54	. .	. .	. . . . .	. .
18	B. A. C. 5612 . .	15	25.2	27.6	28.9	40.2	41.4	42.8	44.2	45.3	56.4	57.9	0.2	37 42.74	0.24	28.42	16 38 11.40	− 16.03
Y.	B. A. C. 5630 . .	16	4.3	6.7	8.0	19.4	20.7	22.1	23.5	24.5	35.6	37.2	39.5	40 21.96	0.24	28.42	16 40 50.62	16.08
	B. A. C. 5653 . .	17	35.9	38.3	39.6	51.1	52.2	53.6	54.9	56.0	7.2	8.7	11.2	43 53.52	0.24	28.42	16 44 22.18	16.14
	B. A. C. 5678 . .	18	. .	. .	. .	55.0	56.2	57.6	59.0	0.1	. .	. .	. .	45 57.58	0.19	28.42	16 46 26.19	16.10
	B. A. C. 5684 . .	19	22.9	25.3	26.7	38.0	39.1	40.5	42.0	43.1	54.2	55.6	57.9	46 40.48	+ 0.24	28.42	16 47 9.14	16.11
	B. A. C. 5690 . .	20	. .	. .	. .	20.0	21.4	23.6	41.1	43.9	45.2	46.5	48.3	47 36.25	− 29.75	28.42	16 47 34.92	16.10
	κ Ophiuchi . . .	21	30.8	32.9	34.0	43.9	44.9	46.2	47.4	48.4	7.9	9.2	11.1	50 46.06	+ 0.14	28.41	16 51 14.61	12.01
	B. A. C. 5739 . .	22	16.2	18.6	20.0	31.3	32.5	33.9	35.3	36.5	47.4	49.0	51.2	55 33.81	+ 0.24	28.41	16 56 2.46	16.17
	* — 31° 12′ . . .	23	. .	. .	. .	57.7	59.2	1.5	19.0	21.6	22.9	24.4	26.1	56 14.05	− 29.78	28.41	16 56 12.68	16.19
	B. A. C. 5762 . .	24	14.7	17.0	18.4	29.7	30.8	32.7	33.7	35.0	46.1	47.5	49.6	58 32.25	+ 0.24	28.41	16 59 0.90	16.16
	B. A. C. 5977 . .	25	25.7	28.1	29.5	41.0	42.3	43.6	45.1	46.2	57.6	59.2	1.5	33 43.62	0.25	28.38	17 34 12.25	16.65
	Lacaille 7424 . .	26	0.6	3.3	4.7	16.9	18.3	19.9	21.3	22.6	34.6	36.1	38.8	37 19.74	0.27	28.37	17 37 48.38	17.45
	Lacaille 7433 . .	27	21.2	23.8	25.3	37.5	38.9	40.3	41.8	43.0	55.1	56.8	59.3	38 40.27	0.27	28.37	17 39 8.91	17.46
	B. A. C. 6031 . .	28	31.5	34.0	35.4	47.0	48.3	49.8	51.2	52.4	3.9	5.5	7.8	42 49.71	0.26	28.37	17 43 18.34	16.88
	B. A. C. 6051 . .	29	9.4	12.0	13.3	25.5	26.7	28.3	29.8	30.9	42.8	44.3	46.8	45 28.16	0.26	28.37	17 45 56.79	17.22
	* — 36° 51′ . .	30	24.3	25.8	27.5	29.0	32.0	. .	47.2	49.9	51.4	52.9	55.0	49 9.50	0.58	28.36	17 49 38.44	17.30
	B. A. C. 6070 . .	31	55.0	57.4	58.9	11.2	12.4	14.0	15.4	16.6	28.5	29.9	32.4	49 13.79	0.27	28.36	17 49 42.42	17.30
	B. A. C. 6083 . .	32	50.1	52.7	54.2	6.0	7.3	9.0	10.4	11.6	23.4	24.8	27.4	52 8.81	+ 0.26	28.36	17 52 37.43	17.23
	* — 36° 22′ . .	33	. .	. .	. .	45.0	46.5	49.0	7.6	10.4	12.0	13.3	15.2	53 2.38	− 31.62	28.36	17 52 59.12	17.23
	γ^2 Sagittarii . . .	34	19.3	21.6	22.9	34.2	35.4	36.7	38.3	39.3	50.1	51.5	54.0	56 36.66	+ 0.24	28.36	17 57 5.26	16.35
	* — 17° 10′ . . .	35	6.8	8.8	10.1	. .	. .	. .	. .	. .	34.8	36.2	37.9	2 22.43	0.23	28.35	18 2 51.01	14.80
	* — 17° 10′ . . .	36	. .	. .	. .	21.2	22.4	23.5	24.8	25.8	. .	. .	. .	2 23.54	+ 0.14	28.35	18 2 52.03	14.80
	μ Sagittarii . . .	37	. .	. .	. .	. .	. .	. .	42.1	44.5	45.9	47.1	48.6	5 45.64	− 35.33	28.35	18 5 38.66	15.24
	B. A. C. 6187 . .	38	. .	. .	. .	. .	. .	. .	30.1	32.8	34.3	35.4	37.1	8 33.94	37.22	28.35	18 8 25.07	− 16.03
	δ Ursæ Minoris . .	39	. .	. .	. .	. .	. .	8.5	28.5	45.5	. .	. .	. .	16 27.50	19.02	28.34	18 16 36.82	+ 53.49
	B. A. C. 6266 . .	40	. .	. .	. .	37.3	38.8	40.7	57.0	59.5	0.8	2.0	3.5	19 52.45	− 27.70	28.34	18 19 53.09	− 15.48
	O. Arg. S. 18328 .	41	44.6	46.8	48.0	58.3	59.5	0.6	1.8	2.7	12.9	14.2	16.3	23 0.52	+ 0.20	28.34	18 23 29.06	14.97
	1 Aquilæ	42	5.5	7.7	8.8	18.6	19.6	20.8	22.0	23.0	32.5	33.9	35.8	27 20.75	+ 0.17	28.33	18 27 49.25	13.94
	51 Cephei, S. P. . .	43	. .	. .	. .	. .	7.0	40.5	16.0	. .	. .	. .	. .	34 41.17	− 0.07	28.32	6 35 9.42	90.34
	O. Arg. S. 18683 .	44	. .	. .	. .	1.5	2.9	4.9	21.3	23.6	25.0	26.1	27.6	40 16.61	− 27.53	28.32	18 40 17.40	15.38
	O. Arg. S. 18765 .	45	14.3	16.5	17.7	28.2	29.3	30.5	31.8	32.8	43.2	44.6	46.7	43 30.51	+ 0.21	28.32	18 43 59.04	15.36
	σ Sagittari . . .	46	5.4	7.7	9.0	19.8	21.1	22.4	23.7	24.9	35.4	36.9	39.0	46 22.30	0.22	28.32	18 46 50.84	15.87
	Weisse 1276 . .	47	8.9	11.0	12.4	22.3	23.4	24.6	25.8	26.8	36.7	38.0	40.0	50 24.54	0.19	28.31	18 50 53.04	14.60
	Weisse 1344 . .	48	1.0	3.1	4.3	14.3	15.3	16.5	17.8	18.8	28.7	30.0	32.0	53 16.53	0.19	28.31	18 53 45.03	14.58
	Lacaille 7998 . .	49	3.5	6.1	7.4	19.2	20.4	21.7	23.3	24.6	36.0	37.5	39.8	59 21.77	+ 0.25	28.31	18 59 50.33	16.83
	B. A. C. 6549 . .	50	. .	. .	. .	. .	. .	. .	54.8	57.5	58.8	0.2	1.8	1 58.62	− 38.13	28.30	19 1 48.79	16.31
	* — 29° 30′ . . .	51	41.3	42.6	44.1	45.5	48.4	. .	. .	. .	. .	. .	. .	4 44.38	+ 38.89	28.30	19 5 51.57	16.20
	B. A. C. 6569 . .	52	19.6	22.0	23.3	34.4	35.5	36.8	38.3	39.5	50.4	51.7	53.9	5 36.85	0.23	28.30	19 6 5.38	16.18
	Lacaille 8060 . .	53	44.7	47.4	48.7	0.1	1.5	2.9	4.4	5.5	16.9	18.3	20.8	9 2.84	0.25	28.30	19 9 31.39	16.72
	Lacaille 8066 . .	54	29.4	31.8	33.2	44.8	46.0	47.4	48.9	50.1	1.4	2.9	5.3	9 47.38	+ 0.25	+28.30	19 10 15.93	− 16.71

13–14. No data for reduction. Both limbs steady.

July 18. n. = — 0.095 s.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 18, 18.7	+ 28.32	— 0.050	+ 0.155

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
ly 18	Lacaille 8077 . .	1	44.3	46.8	48.2	0.0	1.4	2.8	4.3	5.5	17.0	18.5	21.0	12 2.71	+ 0.26	+28.29	19 12 31.26	− 16.96
	Lacaille 8090 . .	2	6.0	8.4	10.0	21.7	23.0	24.4	26.0	27.2	38.8	40.3	42.6	14 24.40	0.26	28.29	19 14 52.95	16.95
	Lacaille 8159 . .	3	4.8	7.2	8.6	19.9	21.2	22.6	24.0	25.1	36.3	37.9	40.4	27 22.55	+ 0.25	28.28	19 27 51.08	16.56
Y.	κ Aquilæ	4	. .	. .	. .	4.7	5.6	7.0	8.0	9.2	18.6	20.0	22.0	29 11.89	− 4.86	28.28	19 29 35.31	13.86
	Lacaille 8193 . .	5	. .	. .	. .	48.0	49.5	52.0	10.5	13.5	14.8	16.3	18.2	34 5.35	− 31.60	28.28	19 34 2.03	16.98
	B. A. C. 6755 . .	6	35.0	37.5	38.8	50.2	51.5	52.9	54.4	55.5	6.7	8.2	10.5	36 52.84	+ 0.24	28.27	19 37 21.35	16.40
	Lacaille 8214 . .	7	. .	. .	. .	24.6	25.8	27.2	28.5	29.8	. .	. .	. .	37 27.18	0.18	28.27	19 37 55.63	16.40
	Lacaille 8238 . .	8	22.6	25.2	26.2	38.7	40.0	41.5	43.1	44.4	56.2	57.6	0.2	41 41.43	0.27	28.27	19 42 9.97	17.06
	Lacaille 8249 . .	9	. .	. .	. .	34.4	35.8	37.1	38.6	39.8	. .	. .	. .	43 37.14	0.18	28.27	19 44 5.59	16.37
	B. A. C. 6816 . .	10	36.2	38.9	40.2	51.8	53.1	54.5	55.9	57.0	8.4	9.9	12.3	45 54.38	0.25	28.27	19 46 22.90	16.49
	Lacaille 8278 . .	11	28.4	31.0	32.5	44.8	46.0	47.3	49.0	50.2	2.0	3.5	6.0	48 47.34	0.27	28.26	19 49 15.87	16.89
	Lacaille 8302 . .	12	14.7	17.3	18.6	30.0	31.2	32.6	34.2	35.3	46.5	48.0	50.4	51 32.62	0.25	28.26	19 52 1.13	16.33
	τ Aquilæ	13	47.2	49.2	50.5	0.0	1.2	2.4	3.6	4.7	14.2	15.3	17.3	57 2.33	0.15	28.26	19 57 30.74	− 12.74
	λ Ursæ Minoris . .	14	. .	. .	. .	6.5	1.0	2.0	6.5	58.0	. .	. .	. .	1 2.80	0.68	28.25	20 1 31.73	+ 203.27
	Lacaille 8385 . .	15	45.7	48.4	49.8	2.0	3.2	4.6	6.2	7.4	19.3	20.8	23.4	7 4.62	0.27	28.25	20 7 33.14	− 16.76
	α² Capricorni . . .	16	47.4	49.5	50.6	0.5	1.6	2.9	4.1	5.1	14.9	16.1	18.3	10 2.82	+ 0.18	28.25	20 10 31.25	14.26
19	β Tauri	17	. .	. .	. .	27.0	28.4	30.7	47.6	50.2	51.6	52.8	54.5	17 42.85	− 29.02	26.31	5 17 40.14	13.52
N	ε Orionis	18	35.8	37.7	39.0	48.7	49.7	50.8	52.0	53.1	2.5	3.9	5.9	28 50.83	+ 0.17	26.30	5 29 17.30	10.68
	α Orionis	19	5.4	7.5	8.6	18.3	19.5	20.7	21.9	22.7	32.6	33.7	35.7	47 20.60	0.17	26.28	5 47 47.05	11.43
20	Venus I	20	18.4	20.4	21.8	31.4	32.5	33.7	34.9	35.8	45.4	46.8	48.7	57 33.62	+ 0.17	26.04	10 57 59.83	. .
	Venus, Cusp. . .	21	. .	. .	. .	4.9	7.1	8.3	9.6	11.0	. .	. .	. .	58 8.16	− 33.29	26.04	10 58 0.91	. .
	δ Leonis	22	. .	. .	. .	. .	. .	. .	56.8	59.2	0.6	1.7	3.1	7 0.28	− 35.39	26.03	11 6 50.92	11.42
	Moon I	23	29.5	31.6	32.7	42.6	43.8	45.0	46.1	47.1	56.8	58.0	0.1	20 44.85	+ 0.07	26.02	11 21 11.04	. .
	Lacaille 6439 . .	24	. .	. .	. .	28.2	29.7	32.0	49.6	52.4	53.8	55.0	56.9	27 44.70	− 30.22	25.82	15 27 40.30	15.36
	ψ¹ Lupi	25	24.5	26.9	28.4	39.8	41.1	42.5	44.1	45.3	56.7	58.3	0.7	30 42.57	+ 0.27	25.82	15 31 8.66	15.56
	ψ² Lupi	26	17.7	20.0	21.5	33.2	34.5	35.8	37.4	38.5	50.0	51.6	53.9	33 35.83	0.28	25.81	15 34 1.92	15.64
	α Serpentis . . .	27	53.4	55.5	56.7	6.3	7.4	8.6	9.8	10.8	20.3	21.6	23.6	37 8.55	0.16	25.81	15 37 34.52	12.09
	B. A. C. 5211 . .	28	3.1	4.4	6.6	17.3	18.4	19.7	21.0	22.2	32.7	34.1	36.2	39 19.61	+ 0.23	25.81	15 39 45.65	14.76
	Lacaille 6541 . .	29	. .	.	. .	56.8	58.4	0.7	18.3	21.1	22.5	23.9	25.5	41 13.40	− 30.14	25.81	15 41 9.07	15.52
	Lacaille 6566 . .	†30	2.0	4.3	5.7	16.8	18.1	19.4	20.8	22.1	33.0	34.5	36.8	44 19.41	+ 0.25	25.81	15 44 45.47	− 15.33
	ζ Ursæ Minoris . .	31	. .	. .	. .	25.1	30.3	36.0	42.4	46.9	. .	. .	. .	48 36.14	0.10	25.80	15 49 2.04	+ 6.26
	δ Scorpii	32	36.0	38.2	39.5	49.8	51.0	52.2	53.5	54.6	4.9	6.2	8.4	51 52.21	+ 0.22	25.80	15 52 18.23	− 14.56
	ν Scorpii	33	. .	. .	. .	52.5	53.9	56.0	11.7	14.2	15.4	16.7	18.2	4 7.32	− 26.96	25.79	16 4 6.15	14.36
	δ Ophiuchi . . .	34	32.6	34.7	36.0	45.5	46.6	47.8	49.0	49.9	59.9	0.7	2.7	6 47.72	+ 0.17	25.79	16 7 13.68	12.98
	Lacaille 6796 . .	35	32.6	34.3	35.8	37.3	40.1	. .	51.8	54.6	56.0	57.4	59.0	12 15.89	0.57	25.78	16 12 42.24	15.98
	Lacaille 6797 . .	36	6.4	8.7	10.1	21.6	23.0	24.3	25.8	26.9	38.1	39.7	42.1	12 24.25	0.27	25.78	16 12 50.30	15.98
	Lacaille 6815 (1st*)	†37	28.6	31.2	32.5	43.9	45.2	46.7	48.2	49.2	0.2	2.0	4.3	14 46.55	0.27	25.78	16 15 12.60	16.00
	Lacaille 6815 (2d*)	†38	3.5	5.0	6.6	8.0	10.8	. .	22.4	25.1	26.5	27.9	29.6	14 46.54	0.57	25.78	16 15 12.89	16.00
	η Draconis . . .	39	. .	. .	. .	40.0	42.3	44.7	47.4	49.5	. .	. .	. .	21 44.78	0.07	25.78	16 22 10.63	4.71
	τ Scorpii	40	42.9	45.1	46.4	57.4	58.6	59.9	1.2	2.4	13.1	14.6	16.7	26 59.85	0.24	25.77	16 27 25.86	15.51
	Lacaille 6930 . .	41	14.4	16.8	18.2	29.2	30.9	32.3	33.8	35.0	46.2	47.8	50.0	32 32.23	0.27	25.77	16 32 58.27	16.19
	ζ Herculis . . .	42	26.7	29.1	30.5	41.9	43.0	44.5	45.9	47.1	58.2	59.8	2.0	35 44.43	0.14	25.77	16 36 10.34	9.81
	Lalande 30963 . .	43	56.9	59.2	0.5	11.0	12.2	13.6	14.9	16.0	26.4	27.9	30.1	55 13.52	+ 0.23	25.75	16 55 39.50	15.45
	O. Arg. S., 16284 .	44	. .	. .	. .	. .	. .	. .	29.5	32.0	33.4	34.6	36.2	56 33.14	− 36.48	25.75	16 56 22.41	− 15.45
	ε Ursæ Minoris . .	45	. .	. .	. .	. .	. .	42.8	52.0	59.0	9.6	18.9	33.3	0 35.93	− 52.87	25.75	17 0 8.81	+ 17.97
	B. A. C. 5809 . .	46	. .	30.2	31.6	42.6	43.9	45.3	46.7	47.8	58.7	0.2	. .	6 45.22	+ 0.24	25.74	17 7 11.20	− 16.09
	B. A. C. 5833 . .	47	47.8	50.0	51.4	2.7	4.0	5.2	6.6	7.9	19.0	20.4	22.7	10 5.25	0.26	25.74	17 10 31.25	16.27
	B. A. C. 5848 . .	48	43.7	46.0	47.3	58.6	59.8	1.2	2.6	3.7	14.7	16.3	18.4	13 1.12	0.25	25.74	17 13 27.11	16.17
	B. A. C. 5868 . .	49	6.0	8.2	9.5	20.0	21.2	22.5	23.8	24.9	35.3	36.7	38.8	16 22.45	0.23	25.73	17 16 48.41	15.41
	b Ophiuchi . . .	50	22.4	24.5	25.8	36.4	37.6	38.9	40.1	41.2	51.6	53.0	55.3	17 38.80	0.23	25.73	17 18 4.76	15.41
	Lacaille 7312 . .	51	24.9	27.2	28.7	40.2	41.4	42.9	44.4	45.7	56.8	58.5	0.8	20 42.86	0.27	25.73	17 21 8.86	16.67
	Lacaille 7324 . .	52	6.7	9.1	10.5	22.0	23.4	24.7	26.1	27.3	38.7	40.4	42.6	22 24.68	0.27	25.73	17 22 50.68	16.68
	Lacaille 7362 . .	53	52.8	55.3	56.7	8.2	9.6	11.0	12.4	13.6	25.1	26.6	29.0	28 10.94	0.27	25.72	17 28 36.93	16.80
	ω Draconis . . .	54	. .	. .	. .	16.0	19.0	22.2	25.7	28.3	. .	. .	. .	37 22.24	+ 0.11	+25.72	17 37 48.07	− 1.69

30. The sky was probably hazy while observing the preceding Lacaille stars.
37–38. Angle 68°; distance 7″. Set A unreliable.

July 18, 20h. 20m. Image east 0.19 r. Clamp west.

July 19–20, to 12h. n. = 0.000 s.
12h. to 19h. −0.100.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 18, 18.7	+ 28.32	− 0.050	+ 0.155

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 20	μ Herculis	1	26. 4	28. 6	30. 0	40. 9	42. 1	43. 4	44. 9	46. 0	56. 6	58. 0	0. 2	40 43. 37	+ 0. 14	+25. 71	17 41 9. 22	— 10. 40
	Ψ¹ Draconis	2	. .	. .	. .	52. 4	55. 9	59. 8	3. 8	7. 0	. .	. .	. .	43 59. 78	+ 0. 09	25. 71	17 44 25. 58	0. 47
	μ Sagittarii	3	. .	. .	. .	10. 5	11. 6	12. 9	14. 2	15. 3	25. 3	26. 7	28. 9	5 18. 18	— 5. 12	25. 69	18 5 38. 75	15. 24
N.	B. A. C. 6187	4	42. 2	44. 4	45. 7	56. 7	57. 9	59. 2	0. 5	1. 6	12. 4	13. 8	16. 1	7 59. 14	+ 0. 24	25. 69	18 8 25. 07	16. 04
	B. A. C. 6199	5	35. 1	37. 4	38. 6	49. 4	50. 6	52. 0	53. 3	54. 4	4. 8	6. 3	8. 3	9 51. 84	0. 23	25. 69	18 10 17. 76	15. 78
	η Serpentis	6	36. 4	38. 5	39. 7	49. 3	50. 3	51. 5	52. 7	53. 7	3. 2	4. 5	6. 4	13 51. 47	0. 17	25. 69	18 14 17. 33	— 13. 29
	δ Ursæ Minoris	7	. .	. .	. .	32. 8	50. 7	10. 8	31. 2	48. 0	. .	. .	. .	16 10. 70	0. 35	25. 68	18 16 36. 73	+ 53. 85
	B. A. C. 6305	8	19. 5	22. 0	23. 4	34. 7	36. 1	37. 6	39. 0	40. 2	51. 4	53. 0	55. 3	24 37. 47	0. 27	25. 68	18 25 3. 42	— 16. 78
	B. A. C. 6308	9	27. 4	29. 6	31. 0	42. 6	43. 8	45. 1	46. 7	47. 9	59. 1	0. 7	2. 9	24 45. 16	0. 27	25. 68	18 25 11. 11	16. 77
	B. A. C. 6317	10	. .	. .	. .	4. 3	5. 5	6. 9	8. 4	9. 6	. .	. .	. .	26 6. 94	0. 21	25. 68	18 26 32. 83	16. 76
	α Lyræ	11	36. 4	38. 9	40. 4	52. 7	54. 1	55. 7	57. 2	58. 5	10. 5	12. 3	14. 8	31 55. 59	+ 0. 13	25. 67	18 32 21. 39	9. 54
	51 Cephei, S. P.	12	. .	. .	. .	31. 0	9. 7	43. 5	. .	. .	. .	. .	. .	35 8. 07	— 24. 08	25. 67	6 35 9. 66	90. 76
	Lacaille 7865	13	31. 6	34. 0	35. 5	47. 2	48. 5	50. 0	51. 4	52. 7	4. 2	5. 7	8. 2	39 49. 86	+ 0. 27	25. 67	18 40 15. 80	17. 03
21	Moon I	14	50. 4	51. 7	53. 0	54. 4	56. 8	. .	25. 6	26. 7	27. 9	29. 1	30. 1	8 10. 57	+ 17. 44	25. 09	12 8 53. 10	. . .
	η Virginis	15	. .	. .	. .	. .	. .	. .	. .	3. 2	4. 4	5. 4	7. 0	13 5. 00	— 33. 81	25. 09	12 12 56. 28	— 11. 39
	ε Ursæ Minoris	16	. .	7. 4	16. 4	28. 0	35. 4	44. 3	53. 0	0. 6	11. 2	20. 1	. .	59 44. 05	— 0. 55	24. 87	17 0 8. 37	+ 18. 11
Y.	B. A. C. 5793	17	26. 1	28. 6	30. 0	41. 4	42. 6	44. 0	45. 3	46. 5	57. 8	59. 4	1. 7	3 43. 95	+ 0. 36	24. 87	17 4 9. 18	— 16. 36
	α Herculis	18	47. 0	48. 9	50. 3	0. 4	1. 5	2. 7	3. 8	4. 9	14. 7	16. 0	18. 0	8 2. 56	0. 12	24. 87	17 8 27. 55	11. 67
	Comp. α Herculis	19	25. 3	26. 6	28. 0	29. 2	31. 7	. .	33. 7	36. 1	37. 4	38. 4	39. 9	8 2. 63	0. 38	24. 87	17 8 27. 88	11. 67
	Lacaille 7241	20	39. 5	42. 2	43. 8	55. 8	57. 3	58. 8	0. 2	1. 5	13. 4	15. 0	17. 4	12 58. 63	0. 41	24. 86	17 13 23. 90	17. 23
	Lacaille 7282	21	59. 5	2. 0	3. 5	15. 0	16. 3	17. 7	19. 2	20. 3	31. 9	33. 3	35. 7	17 17. 67	0. 37	24. 86	17 17 42. 90	16. 70
	B. A. C. 5897	22	42. 8	45. 4	46. 8	58. 0	59. 3	0. 7	2. 0	3. 3	14. 4	16. 0	18. 3	20 0. 64	0. 35	24. 86	17 20 25. 85	16. 35
	Lacaille 7330	23	41. 7	44. 3	45. 6	57. 5	58. 7	0. 0	1. 5	2. 7	14. 2	15. 7	18. 0	22 59. 99	0. 37	24. 85	17 23 25. 21	16. 76
	* — 32° 26′	24	49. 5	52. 3	53. 5	5. 0	6. 1	7. 7	9. 1	10. 3	21. 4	22. 9	25. 1	25 7. 54	+ 0. 36	24. 85	17 25 32. 75	16. 52
	B. A. C. 5923	25	. .	. .	. .	39. 0	40. 5	42. 8	0. 6	3. 3	4. 7	6. 3	7. 9	25 55. 64	— 30. 08	24. 85	17 25 50. 41	16. 53
	α Ophiuchi	26	57. 8	59. 9	1. 0	10. 9	12. 1	13. 2	14. 5	15. 5	25. 1	26. 6	28. 4	28 13. 18	+ 0. 13	24. 85	17 28 38. 16	11. 92
	Lacaille 7395	27	19. 1	21. 6	23. 0	34. 5	35. 9	37. 4	38. 6	39. 8	51. 3	52. 8	55. 0	32 37. 18	0. 36	24. 85	17 33 2. 39	16. 70
	Lacaille 7420	28	21. 3	23. 7	25. 3	37. 6	39. 0	40. 6	42. 2	43. 4	55. 4	57. 3	59. 8	36 40. 51	+ 0. 42	24. 84	17 37 5. 77	17. 63
	Lacaille 7423	29	. .	. .	. .	25. 4	26. 9	28. 3	30. 0	31. 4	43. 4	45. 0	47. 6	37 34. 75	— 6. 03	24. 84	17 37 53. 56	17. 66
	Lacaille 7448	30	. .	. .	. .	. .	. .	. .	34. 6	37. 6	39. 0	40. 4	42. 2	40 38. 76	— 40. 25	24. 84	17 40 23. 35	17. 01
	* — 35° 19′	31	16. 8	19. 3	20. 8	. .	. .	. .	. .	. .	49. 6	51. 2	53. 6	41 35. 22	+ 0. 43	24. 84	17 42 0. 49	17. 02
	* — 35° 19′	32	. .	. .	. .	34. 6	35. 8	37. 3	38. 7	40. 0	. .	. .	. .	41 37. 28	+ 0. 32	24. 84	17 42 2. 44	17. 02
	B. A. C. 6037	33	. .	. .	. .	2. 7	4. 1	6. 5	24. 6	27. 5	28. 9	30. 3	32. 0	44 19. 58	— 30. 81	24. 84	17 44 13. 61	16. 92
	B. A. C. 6045	34	. .	. .	. .	57. 8	58. 8	0. 3	1. 7	3. 0	. .	. .	. .	45 0. 32	+ 0. 32	24. 84	17 45 25. 48	16. 94
	* — 34° 47′	35	. .	. .	. .	18. 2	19. 3	20. 6	22. 1	23. 3	. .	. .	. .	45 20. 70	+ 0. 32	24. 84	17 45 45. 86	16. 93
	Lacaille 7499	36	. .	. .	. .	6. 1	8. 0	10. 4	29. 7	32. 4	34. 3	35. 7	37. 5	48 24. 26	— 32. 66	24. 83	17 48 16. 43	17. 66
	Lacaille 7504	37	. .	. .	. .	. .	. .	. .	46. 4	49. 3	51. 0	52. 3	54. 0	48 50. 60	— 42. 32	24. 83	17 48 33. 11	17. 67
	B. A. C. 6083	38	53. 6	56. 1	57. 6	9. 5	10. 8	12. 5	13. 8	15. 1	26. 8	28. 4	30. 6	52 12. 25	+ 0. 39	24. 83	17 52 37. 47	17. 23
	* — 36° 22′	39	. .	. .	. .	48. 2	50. 0	52. 6	11. 0	13. 8	15. 4	16. 7	18. 6	53 5. 79	— 31. 49	24. 83	17 52 59. 13	17. 23
	Lacaille 7551	†40	48. 7	51. 3	52. 7	4. 9	6. 0	7. 5	9. 2	10. 3	22. 0	23. 6	26. 0	56 7. 47	+ 0. 39	24. 83	17 56 32. 69	17. 27
	B. A. C. 6131	41	. .	. .	. .	44. 4	45. 7	47. 1	48. 6	49. 6	. .	. .	. .	59 47. 08	0. 30	24. 83	18 0 12. 21	16. 47
	* — 34° 38′	42	20. 1	22. 5	24. 0	35. 8	37. 0	38. 5	40. 0	41. 2	52. 5	54. 0	56. 5	4 38. 37	0. 38	24. 83	18 5 3. 58	16. 99
	Lacaille 7629	43	41. 7	44. 1	45. 5	57. 0	58. 5	59. 9	1. 4	2. 7	14. 2	15. 4	18. 0	5 59. 85	0. 38	24. 82	18 6 25. 05	16. 99
	Lacaille 7657	44	44. 3	47. 0	48. 3	0. 0	1. 3	2. 8	4. 2	5. 4	16. 8	18. 4	20. 7	9 2. 65	+ 0. 38	24. 82	18 9 27. 85	17. 01
	η Serpentis	45	. .	. .	. .	4. 0	5. 3	7. 3	22. 2	24. 5	25. 7	26. 8	28. 2	14 18. 00	— 25. 53	24. 82	18 14 17. 29	— 13. 29
	δ Ursæ Minoris	46	. .	. .	. .	36. 5	53. 0	14. 0	34. 5	50. 0	. .	. .	. .	16 13. 60	— 1. 70	24. 81	18 16 36. 71	+ 54. 03
	B. A. C. 6285	47	27. 4	29. 8	31. 3	42. 9	44. 1	45. 5	46. 9	48. 0	59. 3	0. 8	3. 2	21 45. 38	+ 0. 37	24. 81	18 22 10. 56	— 16. 77
	* — 33° 1′	48	46. 3	48. 7	50. 0	1. 7	2. 9	4. 4	5. 8	7. 0	18. 2	19. 8	22. 1	23 4. 26	+ 0. 36	24. 81	18 23 29. 43	16. 77
	B. A. C. 6305	49	. .	. .	. .	. .	. .	. .	13. 9	16. 7	18. 2	19. 5	21. 2	25 17. 90	— 39. 20	24. 81	18 25 3. 51	16. 77
	B. A. C. 6308	50	. .	. .	.	59. 9	1. 2	3. 5	. .	24. 4	25. 6	27. 0	28. 6	25 15. 74	— 29. 59	24. 81	18 25 10. 96	16. 78
	B. A. C. 6344	51	53. 4	55. 9	57. 3	8. 8	10. 0	11. 3	12. 8	14. 2	25. 3	27. 0	29. 2	30 11. 38	+ 0. 37	24. 80	18 30 36. 55	16. 78
	51 Cephei, S. P.	52	. .	. .	. .	29. 5	8. 0	43. 0	18. 0	58. 5	. .	. .	. .	34 43. 40	2. 45	24. 80	6 35 10. 65	91. 36
	β Lyræ	53	22. 0	24. 4	25. 8	37. 4	38. 7	40. 0	41. 5	42. 7	53. 9	55. 6	57. 9	44 39. 99	0. 05	24. 79	18 45 4. 83	10. 20
	Rumker 6881	54	12. 1	14. 4	15. 7	26. 0	27. 2	28. 4	29. 6	30. 7	40. 9	42. 3	44. 4	50 28. 34	0. 09	24. 79	18 50 53. 22	11. 39
	Weisse 1344	55	4. 4	6. 6	7. 7	17. 8	18. 8	20. 0	21. 3	22. 3	32. 1	33. 4	35. 4	53 19. 98	+ 0. 24	+24. 79	18 53 45. 01	— 14. 52

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 20, 14. 0	+ 25. 89	— 0. 048	+ 0. 168
21, 18. 8	+ 24. 79	— 0. 045	+ 0. 174

40. Stars blurred and unsteady.
July 21. n. = — 0. 240.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
21	Bessel Zone 299.167	1	12.5	14.6	15.9	26.2	27.3	28.6	29.8	30.9	41.0	42.4	44.5	57 28.52	+ 0.09	+24.78	18 57 33.39	− 11.43
	Bessel Zone 302.3	2	. .	. .	. .	55.5	56.5	57.7	59.0	0.0	10.1	11.4	13.8	58 3.00	− 5.25	24.78	18 58 22.53	11.43
	Bessel Zone 302.4	3	29.0	31.3	32.5	43.0	44.2	45.4	46.6	47.6	57.7	59.1	1.2	58 45.24	+ 0.09	24.78	18 59 10.11	11.43
	B. A. C. 6549	4	. .	. .	. .	. .	. .	. .	58.3	0.9	2.4	3.6	5.3	2 2.10	− 38.03	24.78	19 1 48.85	16.33
	B. A. C. 6568	5	16.9	19.3	20.7	31.8	33.0	34.3	35.8	37.0	47.9	49.4	51.7	5 34.35	+ 0.34	24.78	19 5 59.47	16.29
	Lacaille 8064	6	40.9	43.6	45.0	57.0	58.4	59.7	1.2	2.6	14.4	15.9	18.5	9 59.75	0.40	24.77	19 10 24.92	17.24
	Lacaille 8090	7	9.2	11.8	13.1	25.2	26.4	27.8	29.3	30.4	42.0	43.6	46.1	14 27.72	0.38	24.77	19 14 52.87	16.97
	δ Aquilæ	8	59.4	1.5	2.7	12.2	13.4	14.5	15.7	16.7	26.2	27.5	29.4	18 14.47	0.16	24.77	19 18 39.40	13.08
	B. A. C. 6755	9	38.5	40.8	42.2	53.8	54.9	56.4	57.7	58.8	10.0	11.6	14.0	36 56.25	0.36	24.75	19 37 21.36	16.43
	Lacaille 8214	10	. .	. .	. .	27.8	29.0	30.4	31.9	33.1	. .	. .	. .	37 30.44	0.30	24.75	19 37 55.49	16.43
	Lacaille 8238	11	26.0	28.6	30.1	42.3	43.5	45.0	46.3	47.6	59.5	1.2	3.7	41 44.89	0.40	24.75	19 42 10.04	17.09
	Lacaille 8249	12	22.7	25.1	26.3	38.1	39.3	40.7	42.0	43.2	54.4	55.9	58.2	43 40.54	0.36	24.75	19 44 5.65	16.40
	Lacaille 8278	13	31.8	34.4	35.8	48.0	49.3	50.9	52.1	53.4	5.4	6.9	9.5	48 50.68	0.40	24.74	19 49 15.82	17.00
	Lacaille 8296	14	51.9	54.4	55.7	7.3	8.5	10.0	11.4	12.7	24.1	25.7	28.0	51 9.97	0.37	24.74	19 51 35.08	16.56
	Lacaille 8313	15	52.6	55.2	56.8	8.7	10.0	11.5	13.0	14.3	26.2	27.5	30.2	54 11.45	+ 0.40	24.74	19 54 36.59	− 16.94
	λ Ursæ Minoris	16	. .	. .	. .	15.0	10.0	12.0	14.5	7.0	. .	. .	. .	1 11.70	− 5.93	24.74	20 1 30.51	+ 144.90
	Lacaille 8387	17	57.5	0.2	1.4	13.3	14.5	16.0	17.5	18.7	30.4	32.0	34.4	7 15.99	+ 0.39	24.73	20 7 41.11	− 16.32
	α^2 Capricorni	18	50.9	53.0	54.2	4.3	5.4	6.4	7.6	8.6	18.5	19.7	21.8	10 6.40	0.23	24.73	20 10 31.36	14.29
	O. Arg. S. 20429	19	45.5	47.9	49.1	59.7	1.0	2.2	3.5	4.5	14.9	16.2	18.4	13 2.08	0.30	24.73	20 13 27.11	15.25
	O. Arg. S. 20469	20	49.5	52.0	53.2	3.8	4.9	6.3	7.6	8.7	19.1	20.6	22.8	16 6.23	0.30	24.73	20 16 31.26	15.33
	O. Arg. S. 20473	21	35.1	36.6	37.8	39.2	41.8	. .	48.5	50.9	52.2	53.5	55.1	16 15.07	0.58	24.73	20 16 40.38	15.33
	O. Arg. S. 20502	22	18.7	21.0	22.3	32.9	34.2	35.5	37.0	38.1	48.1	49.8	51.8	18 35.40	0.30	24.72	20 19 0.42	15.32
	O. Arg. S. 20578	23	32.0	34.4	35.8	46.4	47.7	49.0	50.2	51.2	1.8	3.2	5.3	23 48.82	0.31	24.72	20 24 13.85	15.31
	ε Delphini	24	3.8	5.8	7.0	16.8	18.0	19.0	20.2	21.3	30.9	32.3	34.2	26 19.03	0.13	24.72	20 26 43.88	12.51
	β Orionis	25	19.5	21.3	22.7	32.4	33.6	34.7	35.9	36.8	46.5	47.8	49.7	7 34.63	0.19	24.01	5 7 58.83	10.16
	β Tauri	26	58.9	1.1	2.5	13.5	14.7	16.1	17.4	18.5	29.3	30.8	33.0	17 15.99	0.18	24.00	5 17 40.17	13.57
	α Orionis	27	7.8	9.7	11.0	20.7	21.7	22.9	24.1	25.2	34.6	36.0	38.0	47 22.88	+ 0.18	23.99	5 47 47.05	11.47
	δ Ursæ Minoris, S. P.	†28	27.5	53.0	34.0	. .	. .	. .	. .	. .	. .	. .	. .	19 58.17	− 3 46.95	23.98	18 16 35.20	. .
	γ Geminorum	29	9.8	11.9	13.0	23.0	24.2	25.6	26.9	27.8	37.7	39.0	41.2	29 25.46	+ 0.18	23.97	6 29 49.61	12.16
22	Sun I	†30	10.7	12.8	14.0	24.4	25.5	26.8	28.1	29.3	39.1	40.5	42.7	4 26.72	0.18	23.93	8 4 50.83	. .
	Sun II	†31	25.6	27.9	28.8	39.4	40.4	41.6	42.9	44.0	54.0	55.4	57.5	6 41.59	+ 0.18	23.92	8 7 5.69	. .
	α Hydræ	32	. .	. .	. .	. .	. .	. .	58.9	1.3	2.6	3.6	5.0	21 2.28	− 33.29	23.89	9 20 52.88	10.26
	θ Ursæ Majoris	33	. .	. .	. .	. .	. .	. .	6.7	10.3	12.4	14.4	16.5	24 12.06	− 53.98	23.89	9 23 41.97	13.51
	α Ursæ Majoris	†34	18.7	23.2	25.6	46.5	49.3	51.6	54.2	56.7	16.9	19.4	23.6	54 51.43	+ 0.29	23.85	10 55 15.57	12.15
	Venus I	†35	5.0	7.2	8.2	18.0	18.8	20.0	21.5	22.4	32.0	33.4	35.2	4 20.16	0.18	23.84	11 4 44.18	. .
	Venus Cusp.	36	44.7	46.0	47.2	48.5	50.9	. .	51.4	53.8	55.0	56.0	57.5	4 21.10	0.43	23.84	11 4 45.37	. .
	Moon I	37	52.5	54.6	55.9	5.7	6.8	8.2	9.4	10.4	20.3	21.6	23.7	57 8.10	+ 0.19	23.79	12 57 32.08	. .
	Polaris, S. P.	†38	. .	. .	. .	48.0	6.0	17.5	29.0	41.7	. .	. .	. .	8 16.44	− 3.75	23.78	1 8 36.47	. .
	α Virginis	39	22.3	24.4	25.6	35.4	36.4	37.7	38.9	39.8	49.4	50.7	52.7	17 37.57	+ 0.19	23.78	13 18 1.54	12.13
	ε Serpentis	40	23.7	25.7	26.8	36.5	37.6	38.8	39.9	41.0	50.4	51.8	53.6	43 38.71	+ 0.17	23.71	15 44 2.59	12.23
	δ Scorpii	41	. .	. .	. .	51.9	53.0	54.4	55.7	56.8	6.9	8.3	10.3	51 59.66	− 5.13	23.71	15 52 18.24	14.54
	Lacaille 6648	42	. .	. .	. .	55.6	56.8	58.2	59.5	0.7	. .	. .	. .	53 58.16	+ 0.24	23.71	15 54 22.11	15.45
	B. A. C. 5374	43	54.7	57.0	58.5	9.5	10.7	12.0	13.4	14.5	25.4	26.8	29.1	2 11.96	0.28	23.70	16 2 35.94	15.37
	B. A. C. 5389	44	31.6	33.9	35.1	46.2	47.3	48.7	50.1	51.2	1.8	3.4	5.7	4 48.64	0.28	23.70	16 5 12.62	15.36
	Lacaille 6796	45	. .	. .	. .	15.3	16.8	18.1	19.5	20.7	. .	. .	. .	12 18.08	0.25	23.70	16 12 42.03	15.96
	Lacaille 6797	46	. .	. .	. .	23.6	24.8	26.2	27.6	28.8	. .	. .	. .	12 26.20	0.25	23.70	16 12 50.15	15.96
	Lacaille 6815, (1st *)	†47	5.0	6.5	8.1	9.7	12.4	. .	24.1	27.0	28.2	29.7	31.3	14 48.20	0.61	23.70	16 15 12.51	15.98
	Lacaille 6815, (2d *)	†48	30.8	33.0	34.6	46.2	47.4	48.8	50.4	51.5	2.7	4.4	6.6	14 48.76	0.31	23.70	16 15 12.77	15.98
	α Scorpii	49	24.4	26.4	27.8	38.6	39.7	41.0	42.4	43.5	54.1	55.6	57.8	20 41.03	0.27	23.69	16 21 4.99	15.23
	B. A. C. 5513	50	22.0	24.4	25.6	36.4	37.6	38.9	40.3	41.4	51.9	53.4	55.5	22 38.85	0.27	23.69	16 23 2.81	15.26
	A Draconis	51	11.8	17.3	20.6	47.4	50.4	53.8	57.5	0.2	26.5	29.9	35.5	27 53.72	0.14	23.69	16 28 17.55	1.53
	Lacaille 6930	52	. .	. .	. .	31.7	32.9	34.4	35.9	37.0	. .	. .	. .	32 34.38	+ 0.24	23.69	16 32 58.31	16.17
	ζ Herculis	53	. .	. .	. .	43.9	45.1	46.5	48.0	49.0	0.3	2.0	4.1	35 52.36	− 5.75	23.69	16 36 10.30	9.79
	μ^1 Scorpii	54	57.6	0.0	1.6	13.8	15.0	16.6	18.2	19.4	31.3	33.0	35.6	42 16.55	+ 0.34	23.68	16 42 40.57	16.98
	μ^2 Scorpii	55	25.5	28.0	29.5	41.8	43.2	44.6	46.2	47.5	59.4	1.1	3.5	42 44.57	+ 0.34	+23.68	16 43 8.59	− 16.98

28. Very faint and uncertain.
30. Blurred and undulating.
31. Fair observation.
34. Blurred, especially over C.
35. Tremulous and blurred.
38. Fine observation.
47-48. Distance 9″; angle 65°.

		r.	
July 21, 20h. 35m.	Image east	0.13.	Clamp west.
22, 18h. 30m.	Image east	0.14.	Clamp west.
	Image west	0.28.	Clamp east.
	Image east	0.15.	Clamp west.

			s.
July 21-22.	5h. to 15h.	n. =	−0.040.
	15h. to 19h.		−0.140.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 22, 12.9	+ 23.79	− 0.028	+ 0.180

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 22	Lalande 30963	1	58.9	1.1	2.5	13.2	14.3	15.7	16.9	18.0	28.4	29.8	32.2	55 15.55	+ 0.27	+23.68	16 55 39.50	— 15.44
	O Arg. S. 16284	2	. .	44.0	45.0	56.0	57.3	58.5	59.8	1.0	11.4	12 7	. .	55 58.41	0.26	23.68	16 56 22.35	15.43
	Lacaille 7163	3	11.5	14.2	15.6	27.7	29.0	30.7	32.1	33.4	45.3	46.8	49.4	3 30.52	0.34	23.67	17 3 54.53	17.17
N.	Ophiuchi (1st *)	†4	19.1	21.5	22.8	33.5	34.7	36.1	37.5	38.5	49.5	50.5	52.8	6 36.00	0.27	23.67	17 6 59.94	15.62
	Ophiuchi (2d *)	†5	55.5	57.0	58.4	59.9	2.5	. .	9.5	12.1	13.4	14.7	16.4	6 35.94	0.55	23.67	17 7 0.16	15.62
	B. A. C. 5861	6	. .	. .	. .	22.1	23.3	24.5	25.9	27.0	. .	. .	. .	15 24.56	0.23	23.67	17 15 48.46	15.93
	b Ophiuchi	7	24.4	26.6	27.8	38.4	39.6	40.9	42.1	43.4	53.5	55.0	57.3	17 40.82	0.26	23.67	17 18 4.75	15.40
	Lacaille 7349	8	45.4	47.8	49.5	1.7	3.0	4.4	6.0	7.2	19.1	20.6	23.3	26 4.36	+ 0.33	23.66	17 26 28.35	17.26
	Lacaille 7357	9	. .	. .	. .	25.0	26.7	29.2	48.0	50.9	52.4	53.9	55.8	28 42.74	— 32.15	23.66	17 28 34.25	17.34
	B. A. C. 5977	10	30.2	32.7	33.9	45.5	46.8	48.2	49.7	50.8	2.0	3.6	5.9	33 48.12	+ 0.31	23.66	17 34 12.09	16.63
	ω Draconis	11	42.5	48.1	51.2	. .	21.0	24.0	27.4	. .	56.3	59.8	5.4	37 23.97	0.15	23.66	17 37 47.78	1.58
	μ Herculis	12	28.4	30.6	31.9	42.8	44.0	45.4	46.8	48.0	58.5	0.0	2.4	40 45.35	0.13	23.66	17 41 9.14	— 10.39
	Ψ¹ Draconis	13	. .	. .	. .	54.6	57.8	1.9	5.6	8.9	. .	. .	. .	44 1.76	0.00	23.65	17 44 25.41	+ 0.55
	B. A. C. 6063	14	. .	. .	. .	41.1	42.3	43.7	45.0	46.2	. .	. .	. .	47 43.66	0.23	23.65	17 48 7.54	— 16.02
	B. A. C. 6072	15	21.0	23.5	24.8	35.8	37.0	38.4	39.7	40.8	51.6	53.0	55.4	49 38.27	0.28	23.65	17 50 2.20	16.12
	γ² Sagittarii	16	23.8	26.1	27.5	38.7	40.0	41.5	42.7	43.8	54.7	56.2	58.5	56 41.23	0.29	23.65	17 57 5.17	16.35
	B. A. C. 6174	17	56.3	58.8	0.5	12.6	13.7	15.0	16.7	. .	29.7	31.3	33.7	6 14.83	0.61	23.64	18 6 39.08	17.30
	B. A. C. 6194	18	52.5	54.9	56.1	6.9	8.1	9.5	10.7	11.8	22.5	24.0	26.2	9 9.38	0.27	23.64	18 9 33.29	15.95
	δ Sagittarri	19	36.8	39.2	40.6	51.7	53.0	54.3	55.7	56.9	7.7	9.2	11.5	11 54.24	0.30	23.64	18 12 18.18	16.32
	η Serpentis	20	38.2	40.3	41.5	51.2	52.3	53.5	54.6	55.7	5.1	6.3	8.3	13 53.36	+ 0.19	23.64	18 14 17.19	— 13.30
	δ Ursæ Minoris	21	. .	. .	. .	36.0	52.0	12.0	33.0	49.0	. .	. .	. .	16 12.40	— 0.18	23.64	18 16 35.86	+ 54.22
Y.	β Tauri	22	59.2	1.5	2.8	13.8	15.0	16.3	17.7	18.8	29.7	30.9	33.3	17 16.27	+ 0.21	23.71	5 17 40.19	— 13.60
	δ Orionis	23	23.2	25.2	26.5	36.0	37.1	38.3	39.5	40.4	50.0	51.3	53.3	24 38.25	0.19	23.71	5 25 2.15	10.85
	ε Orionis	24	38.4	40.4	41.8	51.4	52.4	53.5	54.6	55.7	5.2	6.5	8.4	28 53.48	0.19	23.71	5 29 17.38	10.75
	α Canis Majoris	25	28.0	30.2	31.4	41.4	42.5	43.8	45.0	46.0	56.0	57.3	59.2	38 43.71	+ 0.20	23.69	6 39 7.60	8.98
	Mercury II	†26	. .	. .	. .	. .	. .	. .	24.5	26.8	28.2	29.4	31.1	20 28.00	— 35.96	23.68	7 20 15.52	0.20
23	α Leonis	†27	4.9	6.3	7.5	8.9	11.4	26.8	29.0	30.1	. .	. .	. .	0 15.61	+ 26.85	23.65	10 1 6.11	— 11.25
	Venus I	†28	24.0	26.0	27.3	37.0	38.0	39.2	40.5	41.4	51.0	52.2	54.2	7 39.16	0.19	23.63	11 8 2.98	+ 0.85
	β Leonis	†29	26.6	28.7	30.0	40.1	41.2	42.3	. .	. .	54.5	55.8	57.8	41 41.89	0.59	23.63	11 42 6.11	— 11.13
	α Virginis	30	22.3	24.4	25.7	35.4	36.5	37.7	38.9	39.9	49.6	50.8	52.8	17 37.64	0.19	23.60	13 18 1.43	12.22
24	Sun I	31	8.2	10.6	11.9	22.2	23.4	24.6	25.8	26.9	37.0	38.4	40.4	12 24.49	0.20	23.28	8 12 47.97	. .
N.	Sun II	32	23.0	25.1	26.3	36.6	37.7	38.9	40.3	41.4	51.4	52.7	54.8	14 38.93	+ 0.20	23.28	8 15 2.41	. .
	α Leonis	33	27.3	29.3	30.4	. .	. .	10.0	. .	. .	54.6	55.9	58.0	0 58.04	— 15.23	23.27	10 1 6.08	11.25
		34	. .	. .	. .	. .	. .	. .	13.2	15.5	16.7	18.0	19.5					
	δ Leonis	35	11.4	13.4	14.6	25.2	26.3	27.4	28.7	29.8	40.0	41.5	43.5	6 27.44	+ 0.20	23.27	11 6 50.91	11.39
	Venus I	36	. .	. .	. .	53.8	54.8	56.0	57.3	58.3	. .	. .	. .	10 56.04	0.14	23.27	11 11 19.45	. .
	Venus, Cusp.	37	42.1	44.0	45.2	. .	. .	. .	. .	. .	8.8	10.2	12.2	10 57.08	0.23	23.27	11 11 20.58	. .
	Moon I	38	36.5	38.8	40.0	50.4	51.6	52.8	54.2	55.3	5.4	6.9	9.0	46 52.81	0.20	23.25	14 47 16.26	. .
	β Libræ	39	3.0	5.0	6.2	16.0	17.1	18.2	19.5	20.5	30.0	31.3	33.2	9 18.18	0.19	23.25	15 9 41.62	12.99
	ε Serpentis	40	24.0	26.0	27.2	36.9	38.0	39.1	40.3	41.3	50.9	52.2	54.1	43 39.09	+ 0.19	23.24	15 44 2.52	— 12.21
	ζ Ursæ Minoris	41	. .	. .	. .	. .	32.1	38.0	44.0	48.5	34.8	41.3	50.7	49 7.06	— 28.71	23.24	15 49 1.59	+ 6.63
	B. A. C. 5312	42	19.9	22.3	23.5	34.3	35.5	36.8	38.1	39.3	49.7	51.2	53.4	54 36.73	+ 0.24	23.24	15 55 0.21	— 14.96
	B. A. C. 5394	43	55.5	57.8	59.0	9.6	10.7	12.0	13.3	14.4	24.9	26.3	28.3	5 11.98	0.24	23.24	16 5 35.46	14.84
	B. A. C. 5403	44	59.6	1.9	3.2	13.8	15.0	16.2	17.6	18.7	29.2	30.6	32.7	6 16.23	0.24	23.24	16 6 39.71	14.96
	σ Scorpii, (1st *)	45	50.8	52.3	53.7	55.0	57.8	. .	4.2	6.6	8.0	9.3	10.8	12 30.85	0.52	23.24	16 12 54.61	15.03
	σ Scorpii, (2d *)	46	16.0	18.2	19.3	30.2	31.4	32.6	34.0	35.0	45.5	46.9	49.1	12 32.56	+ 0.24	23.24	16 12 56.04	15.03
	α Scorpii	47	. .	. .	. .	39.0	40.2	41.5	42.9	43.9	54.5	56.0	58.1	20 47.01	— 5.31	23.24	16 21 4.94	15.21
	Lacaille 6871	48	31.2	33.5	35.1	46.6	47.9	49.4	50.7	51.8	3.1	4.6	6.9	23 49.16	+ 0.27	23.24	16 24 12.67	16.11
	Lacaille 6891	49	. .	. .	. .	58.3	59.6	1.0	2.5	3.7	15.2	16.7	18.9	27 6.99	— 5.74	23.24	16 27 24.49	16.24
	ζ Ophiuchi	50	2.1	4.3	5.4	15.2	16.3	17.5	18.7	19.7	29.3	30.6	32.6	29 17.43	+ 0.21	23.24	16 29 40.88	13.69
	B. A. C. 5571	51	42.5	44.7	46.0	56.5	57.8	59.0	0.3	1.5	11.8	13.3	15.3	32 58.97	0.24	23.24	16 33 22.45	15.11
	B. A. C. 5603	52	50.2	52.6	53.8	4.9	6.0	7.3	8.7	9.9	20.6	22.1	24.3	36 7.31	+ 0.25	23.24	16 36 30.80	15.60
	B. A. C. 5630	53	. .	. .	. .	40.8	42.3	44.5	2.0	4.8	6.1	7.5	9.2	40 57.15	— 29.82	23.24	16 40 50.57	16.03
	B. A. C. 5653	54	41.0	43.4	44.9	56.1	57.4	58.8	0.2	1.4	12.5	14.0	16.2	43 58.72	+ 0.26	+23.24	16 44 22.22	— 16.10

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 23, 8.3	+ 23.67	— 0.013	+ 0.187
24, 14.5	+ 23.25	— 0.005	+ 0.194

4–5. Angle 307°.
26. Observed with sun shining on east pier.
27. Through clouds.
28. Through clouds.
29. Unsteady.

July 22–23. n. = — 0.010 s.

TE.		OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
3.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
24		B. A. C. 5678 . .	1	45. 0	47. 4	48. 8	0. 0	1. 2	2. 7	4. 1	5. 2	16. 3	17. 7	20. 0	46 2. 58	+ 0. 26	+23. 24	16 46 26. 08	— 16. 05
		B. A. C. 5684 . .	2	. .	. .	. .	43. 1	44. 4	45. 8	47. 2	48. 4	. .	. .	. .	46 45. 78	0. 21	23. 24	16 47 9. 23	16. 07
		B. A. C. 5690 . .	3	53. 9	56. 2	57. 6	8. 8	10. 0	11. 4	12. 9	14. 0	25. 0	26. 5	28. 9	47 11. 38	0. 26	23. 24	16 47 34. 88	16. 05
	κ	Ophiuchi . . .	4	35. 9	37. 9	39. 2	48. 9	50. 0	51. 2	52. 4	53. 5	3. 0	4. 4	6. 3	50 51. 15	0. 19	23. 24	16 51 14. 58	11. 96
		B. A. C. 5739 . .	5	21. 4	23. 7	25. 2	36. 4	37. 5	38. 9	40. 4	41. 5	52. 7	54. 1	56. 4	55 38. 93	0. 26	23. 24	16 56 2. 43	— 16. 13
	ε	Ursæ Minoris . .	6	. .	. .	. .	27. 8	35. 7	44. 4	53. 2	0. 5	. .	. .	. .	59 44. 32	0. 73	23. 24	17 0 8. 29	+ 18. 86
		B. A. C. 5792 . .	7	14. 5	16. 8	18. 0	29. 0	30. 2	31. 5	32. 9	34. 0	44. 6	46. 2	48. 3	3 31. 45	0. 25	23. 24	17 3 54. 94	— 15. 73
25		Sun I	†8	6. 0	8. 0	9. 4	19. 7	20. 8	22. 0	23. 4	24. 4	34. 4	35. 9	37. 8	16 21. 98	0. 18	23. 38	8 16 45. 54	. .
		Sun II	†9	20. 3	22. 5	23. 7	34. 0	35. 1	36. 4	37. 5	38. 7	48. 8	50. 1	52. 3	18 36. 31	0. 18	23. 38	8 18 59. 87	. .
	α	Cor. Borealis . .	†10	15. 6	17. 9	19. 3	30. 0	31. 2	32. 6	34. 0	35. 0	45. 7	47. 1	49. 3	28 32. 52	0. 18	23. 34	15 28 56. 04	10. 36
	κ	Libræ	11	27. 8	29. 8	31. 2	41. 3	42. 4	43. 7	44. 9	46. 0	56. 0	57. 4	59. 5	33 43. 64	0. 25	23. 34	15 34 7. 23	14. 05
	η	Libræ	12	46. 6	48. 8	50. 0	59. 9	1. 0	2. 3	3. 5	4. 6	14. 5	15. 8	17. 8	36 2. 25	0. 23	23. 34	15 36 25. 82	13. 72
	ε	Serpentis	13	24. 0	26. 1	27. 3	36. 8	37. 9	39. 0	40. 2	41. 2	50. [illegible]	52. 1	54. 0	43 39. 03	0. 19	23. 34	15 44 2. 56	— 12. 20
		Moon I	†14	49. 0	51. 3	52. 7	. .	. .	. .	. .	. .	. .	. .	. .	46 51. 00	14. 93	23. 34	15 47 29. 27	. .
26		Moon I	15	40. 4	42. 7	44. 1	54. 8	56. 0	57. 2	58. 6	59. 6	10. 3	. .	13. 8	50 55. 75	1. 73	23. 09	16 51 20. 57	. .
	ε	Ursæ Minoris . .	16	52. 5	7. 5	16. 8	28. 8	37. 4	45. 0	54. 0	2. 0	11. 9	21. 3	35. 5	59 44. 79	0. 34	23. 09	17 0 8. 22	+ 18. 75
		O. Arg. S. 16505 .	17	43. 2	44. 9	46. 2	47. 6	50. 3	. .	57. 3	59. 8	1. 2	2. 6	4. 0	6 23. 71	0. 59	23. 09	17 6 47. 39	— 15. 59
	A	Ophiuchi, (1st *) .	18	19. 7	22. 0	23. 1	34. 0	35. 2	36. 6	37. 7	38. 8	49. 5	50. 9	53. 1	6 36. 42	0. 31	23. 09	17 6 59. 82	15. 60
	A	Ophiuchi, (2d *) .	19	56. 0	57. 5	58. 9	0. 2	2. 9	. .	10. 0	12. 6	13. 9	15. 1	16. 7	6 36. 38	0. 59	23. 09	17 7 0. 06	15. 60
		O. Arg. S. 16531 .	20	. .	. .	. .	26. 7	27. 8	29. 2	30. 5	31. 7	. .	. .	. .	7 29. 18	0. 26	23. 09	17 7 52. 53	15. 61
	θ	Ophiuchi . . .	21	0. 3	2. 5	3. 8	14. 5	15. 7	16. 9	18. 2	19. 4	29. 7	31. 2	33. 2	13 16. 85	0. 31	23. 09	17 13 40. 25	15. 44
	b	Ophiuchi . . .	22	24. 9	27. 1	28. 4	39. 0	40. 2	41. 3	42. 7	43. 8	54. 1	55. 5	57. 8	17 41. 35	0. 30	23. 09	17 18 4. 74	15. 37
	c²	Ophiuchi . . .	23	28. 0	30. 3	31. 6	42. 1	43. 4	44. 6	45. 9	47. 0	57. 4	58. 8	1. 0	22 44. 55	0. 30	23. 09	17 23 7. 94	15. 38
	α	Ophiuchi . . .	24	59. 4	1. 5	2. 7	12. 6	13. 8	14. 9	16. 0	17. 1	26. 9	28. 1	30. 1	28 14. 83	0. 18	23. 09	17 28 38. 10	11. 89
27	α²	Geminorum . . .	25	12. 3	14. 8	16. 1	27. 6	28. 6	30. 1	31. 4	32. 6	43. 9	45. 3	47. 9	25 30. 05	0. 21	22. 87	7 25 53. 13	13. 41
28		Sun I	26	55. 8	58. 0	59. 2	9. 5	10. 7	12. 0	13. 2	14. 2	24. 3	25. 6	27. 7	28 11. 84	0. 21	22. 86	8 28 34. 91	. .
		Sun II	27	9. 7	11. 8	13. 0	23. 2	24. 4	25. 6	26. 9	27. 9	38. 0	39. 3	41. 4	30 25. 56	0. 21	22. 86	8 30 48. 63	. .
	α	Leonis	28	27. 6	29. 6	30. 8	40. 8	41. 9	43. 1	44. 3	45. 3	55. 1	56. 3	58. 4	0 43. 02	0. 21	22. 86	10 1 6. 09	— 11. 25
		Venus I	29	2. 1	3. 5	4. 8	6. 0	8. 4	. .	36. 6	37. 6	38. 8	39. 9	41. 0	23 21. 87	17. 08	22. 85	11 24 1. 80	+ 0. 90
29		B. A. C. 6682 . .	30	33. 1	35. 5	36. 8	. .	. .	. .	. .	. .	3. 4	5. 0	7. 0	23 50. 13	0. 34	22. 17	19 24 12. 64	— 16. 04
	κ	Aquilæ	31	57. 9	59. 8	1. 0	10. 8	11. 8	13. 0	14. 2	15. 1	24. 9	26. 2	28. 2	29 12. 99	0. 24	22. 17	19 29 35. 40	13. 92
	γ	Aquilæ	32	49. 3	50. 6	51. 9	53. 2	55. 5	. .	56. 7	58. 9	0. 2	1. 4	2. 8	39 26. 05	+ 0. 47	22. 17	19 39 48. 69	— 12. 51
	λ	Ursæ Minoris . .	33	0. 0	3. 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	1 31. 50	— 26. 72	22. 17	20 1 26. 95	+ 145. 85
30	τ	Aquilæ	34	53. 4	55. 5	56. 7	6. 4	7. 5	8. 6	9. 9	10. 9	20. 4	21. 6	23. 6	57 8. 59	+ 0. 23	. .	. . . . .	— 12. 82
	α²	Capricorni . . .	35	53. 7	55. 8	57. 0	6. 9	8. 1	9. 2	10. 5	11. 5	21. 3	22. 5	24. 6	10 9. 19	+ 0. 25	. .	. . . . .	— 14. 37
	λ	Ursæ Minoris . .	†36	. .	. .	. .	. .	. .	. .	. .	. .	. .	16. 0	58. 0	13 7. 00	— 12 0. 98	. .	. . . . .	+ 145. 78
	ρ	Capricorni . . .	37	29. 1	31. 1	32. 3	. .	. .	. .	. .	. .	. .	.	. .	20 30. 83	+ 14. 25	. .	. . . . .	— 14. 74
31	ξ	Aquarii	38	54. 5	56. 5	57. 8	7. 5	8. 6	9. 8	10. 9	12. 0	21. 5	22. 9	24. 7	30 9. 70	0. 25	21. 66	21 30 31. 61	13. 77
	ε	Pegasi	39	54. 3	56. 4	57. 5	7. 3	8. 4	9. 6	10. 6	11. 8	21. 4	22. 5	24. 6	37 9. 49	+ 0. 23	21. 66	21 37 31. 38	12. 84
	μ	Capricorni . . .	40	. .	. .	. .	29. 5	30. 6	31. 8	33. 0	34. 0	43. 8	45. 2	46. 9	45 36. 85	— 4. 89	21. 66	21 45 53. 62	14. 05
	θ	Aquarii	41	3. 0	5. 1	6. 3	16. 0	17. 1	18. 3	19. 5	20. 5	30. 1	31. 5	33. 4	9 18. 25	+ 0. 25	21. 66	22 9 40. 16	13. 57
		Moon II	42	. .	8. 3	9. 7	19. 5	20. 7	21. 8	23. 1	24. 1	33. 9	35. 2	. .	12 21. 81	0. 23	21. 66	22 12 43. 70	. .
	γ	Aquarii	43	1. 8	3. 9	5. 1	14. 8	15. 8	16. 9	18. 1	19. 0	28. 5	29. 9	31. 8	14 16. 87	0. 24	21. 66	22 14 38. 77	13. 27
	ζ	Aquarii, (1st *) .	44	52. 3	53. 6	54. 8	56. 0	58. 4	. .	58. 5	0. 8	2. 0	3. 1	4. 7	21 28. 42	0. 49	21. 66	22 21 50. 57	13. 20
	ζ	Aquarii, (2d *) .	45	13. 7	15. 8	17. 0	26. 6	27. 7	28. 8	30. 0	31. 1	40. 5	41. 7	43. 7	21 28. 78	0. 24	21. 66	22 21 50. 68	13. 20
	η	Aquarii	46	46. 0	48. 0	49. 2	58. 8	59. 8	1. 0	2. 3	3. 2	12. 5	14. 0	15. 9	28 0. 97	0. 24	21. 66	22 28 22. 87	13. 20
	δ	Orionis	47	25. 3	27. 4	28. 5	38. 2	39. 2	40. 3	41. 5	42. 6	52. 1	53. 4	55. 3	24 40. 35	0. 23	21. 80	5 25 2. 38	11. 07
	ε	Orionis	48	40. 5	42. 6	43. 7	53. 4	54. 4	55. 6	56. 8	57. 8	7. 3	8. 6	10. 5	28 55. 56	0. 23	21. 80	5 29 17. 59	10. 96
	α	Canis Minoris . .	49	32. 3	34. 4	35. 6	45. 2	46. 3	47. 4	48. 6	49. 7	59. 1	0. 3	2. 4	31 47. 39	0. 23	21. 77	7 32 9. 39	11. 04
	β	Geminorum . . .	50	18. 6	20. 9	22. 1	33. 0	34. 4	35. 6	36. 9	38. 2	49. 0	50. 2	52. 5	36 35. 58	+ 0. 24	+21. 77	7 36 57. 59	— 12. 91

8–9. Through clouds.
10. Through clouds.
14. Through clouds; rather poor observation.
36. Second of last wire perhaps wrong.
July 29. All the observations made by glimpses through clouds.
July 30. Observations can give no independent result.

		s.
July 23–24, to	15. 2h. n. =	— 0. 010.
24, after 15. 2h.		— 0. 050.
25,		— 0. 100.
26,		— 0. 165.
28–29–30,		— 0. 075.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
July 25, 15. 6	+ 23. 34	— 0. 006	+ 0. 201
26, 17. 3	23. 09	0. 008	0. 208
28, 8. 7	22. 86	0. 011	0. 222
29, 19. 6	22. 17	0. 012	0. 229
31, 21. 9	+ 21. 66	— 0. 010	+ 0. 236

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 1	Sun I	1	34.3	36.4	37.6	47.8	48.9	50.3	51.4	52.3	2.5	3.8	5.7	43 50.09	+ 0.24	+21.76	8 44 12.09	. .
	Sun II	†2	47.4	49.5	50.7	0.8	1.9	3.1	4.5	5.5	15.6	16.9	19.1	46 3.18	0.24	21.76	8 46 25.18	. .
	Venus I	3	26.7	28.8	29.9	39.8	40.7	41.8	43.0	44.1	53.5	54.9	56.8	35 41.82	0.23	21.72	11 36 3.77	+ 0.94
Y.	Lacaille 9036	4	19.2	21.7	23.2	35.0	36.1	37.6	39.1	40.2	51.9	53.3	55.5	1 37.53	+ 0.36	21.59	22 1 59.48	− 15.12
	Lacaille 9047	5	. .	. .	. .	. .	. .	. .	13.5	16.3	17.9	19.4	21.4	4 17.70	− 42.27	21.58	22 3 57.01	15.44
	θ Aquarii	6	3.3	5.3	6.5	16.2	17.3	18.4	19.7	20.7	30.2	31.5	33.5	9 18.42	+ 0.25	21.58	22 9 40.25	13.59
	γ Aquarii	7	2.0	4.0	5.1	14.8	15.7	16.8	18.1	19.3	28.7	29.8	31.9	14 16.93	0.24	21.58	22 14 38.75	13.29
	π Aquarii	8	43.9	46.0	47.1	56.9	57.8	59.0	0.2	1.3	10.8	12.0	14.0	17 59.00	0.23	21.58	22 18 20.81	13.18
	Lacaille 9163	9	16.0	18.5	20.0	32.0	33.2	34.7	36.1	37.4	49.1	50.8	53.3	23 34.65	0.36	21.58	22 23 56.59	14.82
	Lacaille 9175	10	1.4	3.7	5.3	17.2	18.3	19.9	21.4	22.5	34.1	35.6	38.2	26 19.78	0.36	21.58	22 26 41.72	14.73
	η Aquarii	11	46.0	48.1	49.3	59.0	59.9	1.1	2.4	3.3	12.8	14.1	16.1	28 1.10	+ 0.23	21.58	22 28 22.91	13.21
	Lacaille 9196	12	. .	. .	. .	58.7	0.4	2.9	22.3	25.2	26.8	28.2	30.1	31 16.82	− 32.73	21.58	22 31 5.67	14.90
	ρ Gruis	13	54.7	57.4	58.9	12.0	13.4	15.0	16.6	18.0	30.7	32.4	35.1	35 14.93	+ 0.41	21.58	22 35 36.92	15.01
	Lacaille 9242	14	35.4	38.2	39.6	52.8	54.1	55.9	57.5	[illegible].8	11.5	13.2	16.0	38 55.73	0.41	21.58	22 39 17.72	14.94
	Lacaille 9270	15	44.0	46.7	48.5	1.4	2.3	4.5	6.0	7.4	20.4	21.8	24.0	42 4.27	0.35	21.58	22 42 26.20	14.86
	Lacaille 9298	16	. .	. .	. .	12.5	13.8	15.4	16.9	18.1	. .	. .	. .	47 15.34	0.31	21.58	22 47 37.23	14.43
	Lacaille 9313	17	33.3	36.0	37.5	50.0	51.2	52.8	54.4	55.6	7.8	9.4	12.0	49 52.73	0.38	21.57	22 50 14.68	14.45
	Lacaille 9326	18	1.0	4.1	5.4	18.4	19.8	21.5	23.2	24.5	37.0	38.7	41.4	52 21.36	0.40	21.57	22 52 43.33	14.59
	B. A. C. 8045	19	38.0	40.5	42.1	54.6	56.1	57.6	59.2	0.5	12.7	14.3	17.0	58 57.51	0.39	21.57	22 59 19.47	14.30
	Lacaille 9388	20	46.5	48.9	50.4	1.5	2.6	4.0	5.4	6.6	17.5	19.0	21.1	3 3.95	0.33	21.57	23 3 25.85	13.81
	Moon II	21	40.7	42.7	43.9	53.7	54.8	56.0	57.3	58.3	7.9	9.2	11.4	8 55.99	0.23	21.57	23 9 17.79	. .
	κ Piscium	22	21.5	23.6	24.7	34.4	35.4	36.6	37.8	38.8	48.3	49.5	51.5	19 36.55	+ 0.23	21.57	23 19 58.35	13.03
	Lacaille 9489	23	. .	. .	. .	5.9	7.3	9.4	26.0	28.6	30.0	31.4	32.9	21 21.44	− 28.30	21.57	23 21 14.71	13.40
	ι Piscium	24	21.0	23.3	24.3	34.1	35.2	36.3	37.6	38.5	48.0	49.3	51.3	32 36.26	+ 0.22	21.57	23 32 58.05	13.04
2	δ Sculptoris	25	. .	. .	. .	43.0	44.5	46.7	3.9	6.4	7.7	9.0	10.7	41 58.99	− 29.02	20.85	23 41 50.82	13.16
N.	B. A. C. 8314	26	. .	. .	. .	49.7	53.3	57.8	2.1	5.4	. .	. .	. .	47 57.66	+ 0.26	20.85	23 48 18.77	15.13
	ω Piscium	27	. .	46.1	47.4	57.2	58.1	59.4	0.5	1.5	11.0	12.3	. .	51 59.28	0.21	20.85	23 52 20.34	12.94
	Moon II	28	24.7	26.9	28.0	37.9	39.0	40.2	41.4	42.5	52.2	53.6	55.7	3 40.19	0.22	20.84	0 4 1.25	. .
	γ Pegasi	29	38.3	40.3	41.5	51.5	52.6	53.8	55.0	56.0	5.8	7.2	9.1	5 53.74	0.22	20.84	0 6 14.80	12.96
	d Piscium	30	0.3	. .	3.5	13.2	14.3	15.6	16.8	17.8	27.3	. .	30.7	13 15.50	0.22	20.84	0 13 36.56	12.87
	45 Piscium	31	5.4	7.7	8.9	18.5	19.6	20.8	22.0	23.1	32.6	33.9	35.9	18 20.76	0.22	20.84	0 18 41.82	12.86
	Neptune	32	35.2	37.3	38.5	48.2	49.3	50.4	51.6	52.6	2.0	3.3	5.2	23 50.33	0.23	20.84	0 24 11.40	. .
Y.	α Orionis	33	10.9	13.1	14.3	23.9	25.0	26.3	27.4	28.5	38.0	39.2	41.3	47 26.17	0.22	20.91	5 47 47.30	11.73
N.	α^2 Geminorum	34	14.5	16.9	18.3	29.8	30.9	32.4	33.8	34.9	46.2	47.6	50.0	25 32.30	0.22	20.77	7 25 53.29	13.51
	β Geminorum	35	19.5	21.9	23.2	34.1	35.3	36.7	38.0	39.1	50.0	51.4	53.7	36 36.63	0.22	20.77	7 36 57.62	12.93
3	Sun I	†36	20.4	22.4	23.7	33.9	34.9	36.1	37.6	38.6	48.4	50.0	51.8	51 36.16	0.22	20.76	8 51 57.14	. .
	Sun II	†37	33.4	35.4	36.4	46.8	48.0	49.2	50.5	51.5	1.3	2.7	4.5	53 49.06	0.22	20.76	8 54 10.04	. .
Y.	45 Piscium	38	5.5	7.7	8.9	18.8	19.8	21.0	22.2	23.2	32.6	34.0	36.0	18 20.88	0.20	20.86	0 18 41.94	12.88
	12 Ceti	39	30.3	32.3	33.4	43.2	44.3	45.5	46.7	47.8	57.2	58.4	0.3	22 45.40	0.26	20.85	0 23 6.51	12.70
	B. A. C. 136	40	24.1	26.5	28.0	40.0	41.2	42.8	44.4	45.5	57.2	58.8	1.1	26 42.69	0.46	20.85	0 27 4.00	12.27
	Lacaille 142	41	. .	. .	. .	57.6	58.8	0.0	1.4	2.5	. .	. .	. .	29 0.06	0.31	20.85	0 29 21.22	12.39
	Lacaille 194	42	29.0	31.[illegible]	[illegible]2.7	44.3	45.5	46.9	48.4	49.5	0.6	2.0	4.4	37 46.78	0.43	20.84	0 38 8.05	12.10
	Lacaille 217	43	26.2	28.5	29.9	41.3	42.6	44.0	45.4	46.6	57.7	59.3	1.5	40 43.91	0.43	20.84	0 41 5.18	12.04
	Lacaille 239	44	41.0	43.7	45.1	56.3	57.7	59.0	0.5	1.6	12.7	14.2	16.4	45 58.93	0.42	20.84	0 46 20.19	11.96
	α Sculptoris	45	24.6	27.1	28.5	39.5	40.8	42.2	43.6	44.7	55.7	57.2	59.5	51 42.13	0.41	20.83	0 52 3.37	11.87
	ε Piscium	46	. .	. .	. .	30.3	31.4	32.4	33.6	34.7	. .	. .	. .	55 32.49	0.20	20.83	0 55 53.52	12.81
	Moon II	47	4.4	6.7	7.9	18.0	19.1	20.2	21.5	22.6	32.3	33.7	35.8	57 20.20	0.19	20.83	0 57 41.22	. .
	Lacaille 310	48	. .	. .	. .	13.6	14.7	16.0	17.2	18.4	. .	. .	. .	0 15.98	0.32	20.82	1 0 37.12	11.87
	Lalande 319	49	53.9	56.2	57.4	8.4	9.5	10.9	12.2	13.3	23.9	25.2	27.5	3 10.76	+ 0.38	20.82	1 3 31.96	11.77
	Polaris	†50	. .	. .	. .	57.0	40.0	29.0	19.0	56.0	. .	. .	. .	9 28.20	− 2.17	20.82	1 9 46.85	104.60
	43 Ceti	51	1.7	3.7	4.9	14.5	15.6	16.7	17.8	18.9	28.4	29.6	31.5	15 16.66	+ 0.24	20.81	1 15 37.71	12.36
	θ Ceti	52	37.4	39.4	40.6	50.3	51.5	52.8	53.9	54.9	4.4	5.7	7.7	16 52.60	0.27	20.81	1 17 13.68	12.15
	B. A. C. 433	53	53.9	55.9	57.1	6.7	7.8	8.9	10.1	11.2	20.6	21.9	23.8	19 8.90	0.24	20.81	1 19 29.95	12.44
	η Piscium	54	36.4	38.4	39.6	49.6	50.7	51.8	53.0	54.0	3.8	5.2	6.2	23 51.70	0.18	20.81	1 24 12.69	13.03
	101 Piscium	55	54.0	56.1	57.2	7.2	8.3	9.6	10.7	11.9	21.6	22.[illegible]	24.8	28 9.47	+ 0.18	+20.80	1 28 30.45	− 13.00

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 1, 15.5	+ 21.67	− 0.013	+ 0.232
2, 3.4	+ 20.81	− 0.010	. .
3, 3.4	+ 20.72	− 0.044	. .

2. Steady.
36–37. Both limbs much blurred.
50. Unsteady.
August 3. Stars unsteady.

August 3, 1h. 40m. Image east $\overset{r.}{0.37}$. Clamp west.

July 31–August 1, 5h. to 12h. n. = $\overset{s.}{-0.620}$.
22h. to 0h. 0.100.
2. 0.087.
3, 0h. to 2h. −0.236.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 3	ν Piscium	1	45. 4	47. 5	48. 8	58. 3	59. 4	0. 5	1. 7	2. 9	12. 3	13. 4	15. 6	34 0. 53	+ 0. 21	+20. 80	1 34 21. 54	— 12. 58
	α Canis Majoris	2	31. 2	33. 5	34. 6	44. 8	45. 9	46. 9	48. 3	49. 3	59. 2	0. 5	2. 6	38 46. 98	+ 0. 25	20. 58	6 39 7. 81	9. 18
	α Canis Minoris	3	- -	- -	- -	46. 5	47. 5	48. 7	49. 9	50. 9	0. 3	1. 7	3. 6	31 53. 64	— 4. 78	20. 54	7 32 9. 40	11. 07
	β Geminorum	4	20. 0	22. 3	23. 6	34. 5	35. 5	36. 8	38. 2	39. 0	50. 1	51. 7	53. 7	36 36. 85	+ 0. 24	20. 54	7 36 57. 63	— 12. 95
4	Sun I	5	12. 2	14. 4	15. 6	25. 8	26. 8	28. 2	29. 3	30. 3	40. 3	41. 6	43. 7	55 28. 02	0. 24	20. 48	8 55 48. 74	- -
	Sun II	6	24. 7	26. 9	28. 1	38. 3	39. 5	40. 7	41. 9	42. 9	52. 9	54. 2	56. 3	57 40. 58	0. 24	20. 48	8 58 1. 30	- -
	Venus I	[illegible]	1. 2	3. 2	4. 4	14. 1	15. 1	16. 3	17. 6	18. 5	28. 0	29. 3	31. 3	44 16. 27	0. 23	20. 35	11 44 36. 85	+ 0. 98
	α² Geminorum	†8	15. 2	17. 5	19. 0	30. 3	31. 6	32. 9	- -	- -	46. 7	48. 3	50. 7	25 32. 47	0. 79	20. 06	7 25 53. 32	— 13. 55
	α Canis Minoris	9	34. 0	36. 0	37. 2	47. 0	48. 0	49. 2	50. 3	51. 4	0. 8	2. 1	3. 9	31 49. 08	0. 29	20. 06	7 32 9. 43	11. 09
	β Geminorum	†10	20. 0	22. 5	23. 8	- -	- -	- -	- -	-	50. 4	51. 9	54. 2	36 37. 13	0. 36	20. 06	7 36 57. 55	12. 97
5	β Leonis	11	30. 2	32. 3	33. 5	43. 5	44. 7	45. 8	47. 0	48. 1	58. 0	59. 4	1. 3	41 45. 80	0. 29	19. 98	11 42 6. 07	— 11. 03
	Venus I	12	47. 0	49. 0	50. 2	59. 9	1. 0	2. 0	3. 2	4. 2	13. 8	15. 1	17. 0	47 2. 04	+ 0. 29	19. 98	11 47 22. 31	+ 1. 00
	Polaris, S. P.	13	- -	- -	- -	5. 0	24. 5	37. 5	49. 0	10. 0	- -	- -	- -	9 37. 20	— 8. 90	19. 95	1 9 48. 25	— 105. 92
	α Virginis	14	25. 7	27. 7	29. 0	38. 9	39. 9	41. 1	42. 2	43. 2	53. 1	54. 4	56. 4	17 41. 05	+ 0. 29	19. 95	13 18 1. 29	11. 97
	η Piscium	15	37. 0	39. 4	40. 5	50. 2	51. 3	52. 6	53. 9	55. 6	5. 0	6. 1	8. 0	23 52. 64	+ 0. 26	19. 89	1 24 12. 79	13. 09
	Polaris	16	- -	- -	- -	- -	- -	- -	29. 5	0. 5	52. 0	35. 0	36. 0	31 42. 60	— 22 13. 31	19. 89	1 9 49. 18	106. 37
	β Arietis	17	32. 1	34. 3	35. 5	45. 6	46. 8	47. 9	49. 0	50. 4	0. 6	1. 8	4. 1	46 48. 01	+ 0. 26	19. 87	1 47 8. 14	13. 38
	α Arietis	18	54. 5	56. 7	57. 9	8. 6	9. 7	10. 8	12. 0	13. 0	23. 4	24. 8	26. 9	59 10. 75	+ 0. 25	19. 85	1 59 30. 85	13. 62
	15 Arietis	19	- -	- -	- -	57. 9	59. 2	1. 3	16. 9	19. 3	20. 6	22. 0	23. 4	3 12. 58	— 26. 87	19. 85	2 3 5. 56	13. 31
	ξ¹ Ceti	20	12. 4	14. 4	15. 7	25. 4	26. 4	27. 6	28. 7	29. 8	39. 4	40. 6	42. 7	5 27. 55	+ 0. 27	19. 85	2 5 47. 67	12. 70
	θ Arietis	21	58. 0	0. 2	1. 4	11. 6	12. 8	14. 0	15. 2	16. 3	26. 5	27. 7	29. 8	10 13. 95	0. 26	19. 84	2 10 34. 05	13. 34
	Moon II	22	40. 9	42. 9	44. 2	54. 7	55. 8	57. 0	58. 4	59. 5	9. 6	10. 8	13. 0	43 56. 98	0. 26	19. 81	2 44 17. 05	- -
	ε Arietis	23	49. 9	52. 1	53. 4	3. 8	4. 9	6. 2	7. 4	8. 4	18. 5	19. 8	22. 2	51 6. 05	0. 26	19. 80	2 51 26. 11	13. 45
	α Ceti	24	35. 0	37. 1	38. 3	48. 0	49. 0	50. 1	51. 3	52. 4	2. 0	3. 1	5. 1	54 50. 13	0. 28	19. 79	2 55 10. 20	12. 23
	δ Arietis	25	15. 1	17. 3	18. 4	28. 7	29. 9	31. 1	32. 5	33. 4	43. 5	44. 9	46. 9	3 31. 06	0. 26	19. 78	3 3 51. 10	13. 36
6	α Tauri	26	30. 7	32. 9	34. 0	44. 0	45. 2	46. 5	47. 8	48. 7	58. 6	0. 0	1. 9	27 46. 39	0. 26	19. 69	4 28 6. 34	12. 93
	α Ophiuchi	27	2. 8	4. 9	6. 2	16. 0	17. 1	18. 2	19. 5	20. 5	30. 1	31. 6	33. 5	28 18. 22	0. 28	19. 48	17 28 37. 98	11. 80
	Rumker 5958	28	27. 6	29. 7	30. 9	40. 9	42. 1	43. 3	44. 5	45. 5	55. 2	56. 6	58. 5	34 43. 16	0. 28	19. 48	17 35 2. 92	11. 55
	3 Sagittarii	†29	23. 9	26. 2	27. 6	38. 5	39. 7	40. 8	42. 3	43. 5	54. 3	55. 6	57. 8	38 40. 93	+ 0. 35	19. 48	17 39 0. 76	15. 85
	ο Herculis	30	- -	- -	- -	53. 0	54. 2	55. 5	56. 8	58. 0	8. 8	10. 3	12. 5	2 1. 14	— 5. 42	19. 48	18 2 15. 20	10. 31
	A Herculis	31	10. 6	13. 2	14. 4	25. 7	26. 9	28. 3	29. 7	30. 9	41. 9	43. 5	45. 8	6 28. 26	+ 0. 27	19. 48	18 6 48. 01	10. 05
	η Serpentis	32	- -	- -	- -	9. 2	10. 4	12. 4	27. 4	29. 7	30. 9	32. 0	33. 4	14 23. 18	— 25. 42	19. 48	18 14 17. 24	— 13. 23
	δ Ursæ Minoris	33	- -	- -	- -	32. 5	50. 0	10. 0	30. 5	48. 5	- -	- -	- -	16 10. 30	+ 2. 34	19. 48	18 16 32. 12	+ 58. 15
	B. A. C. 6293	34	50. 7	53. 0	54. 1	4. 3	5. 4	6. 7	8. 0	9. 0	19. 0	20. 4	22. 5	23 6. 65	0. 34	19. 48	18 23 26. 47	— 14. 92
	1 Aquilæ	35	14. 3	16. 4	17. 5	27. 2	28. 3	29. 5	30. 6	31. 7	41. 3	42. 6	44. 6	27 29. 45	0. 31	19. 48	18 27 49. 24	13. 91
	Weisse 793	36	20. 3	22. 3	23. 5	33. 4	34. 4	35. 7	36. 8	37. 7	47. 4	48. 7	50. 6	32 35. 53	+ 0. 31	19. 48	18 32 55. 32	14. 01
	51 Cephei, S. P.	37	11. 0	29. 0	5. 0	- -	- -	- -	- -	- -	- -	- -	- -	39 35. 00	— 4 40. 00	19. 48	6 35 14. 48	95. 83
	O. Arg. S. 18765	38	23. 0	25. 2	26. 4	37. 0	38. 0	39. 2	40. 5	41. 6	51. 8	53. 1	55. 3	43 39. 19	+ 0. 35	19. 48	18 43 59. 02	15. 36
	σ Sagittarii	39	14. 0	16. 4	17. 6	28. 5	29. 7	31. 0	32. 3	33. 4	44. 0	45. 4	47. 6	46 30. 90	0. 37	19. 48	18 46 50. 75	15. 87
	θ Lyræ	40	1. 3	4. 0	5. 4	17. 7	19. 2	20. 6	22. 1	23. 3	35. 2	37. 0	39. 4	11 20. 47	0. 29	19. 48	19 11 40. 24	9. 77
	κ Cygni	41	- -	- -	- -	36. 3	37. 9	39. 8	41. 9	43. 4	- -	- -	- -	13 39. 86	0. 27	19. 48	19 13 59. 61	7. 56
	Gr. C. 1728	42	52. 3	54. 4	55. 5	5. 5	6. 6	7. 9	9. 2	10. 2	20. 0	21. 4	23. 5	18 7. 86	0. 33	19. 48	19 18 27. 67	14. 66
	ε Aquilæ	43	59. 2	1. 4	2. 5	12. 1	13. 3	14. 4	15. 6	16. 6	25. 9	27. 1	29. 1	23 14. 29	0. 29	19. 48	19 23 34. 06	13. 56
	μ Aquilæ	44	52. 8	54. 9	56. 0	5. 7	6. 8	8. 0	9. 2	10. 2	19. 7	21. 0	23. 0	27 7. 94	0. 28	19. 48	19 27 27. 70	12. 72
	κ Aquilæ	45	0. 4	2. 5	3. 7	13. 5	14. 6	15. 7	16. 9	17. 8	27. 4	28. 7	30. 7	29 15. 63	+ 0. 31	19. 48	19 29 35. 42	13. 93
	B. A. C. 6730	46	- -	- -	- -	17. 4	19. 5	22. 5	45. 6	49. 3	50. 9	52. 7	55. 1	32 39. 12	— 39. 54	19. 48	19 32 19. 06	8. 39
	θ Cygni	47	- -	- -	- -	26. 3	27. 8	29. 7	31. 6	33. 2	- -	- -	- -	32 29. 72	+ 0. 26	19. 48	19 32 49. 46	8. 40
	χ Aquilæ	48	- -	- -	- -	49. 2	50. 3	51. 5	52. 7	53. 7	- -	- -	- -	35 51. 48	0. 23	19. 48	19 36 11. 19	12. 39
	O. Arg. S. 19978	49	6. 0	8. 5	9. 8	20. 9	22. 0	23. 3	24. 7	25. 8	36. 7	38. 3	40. 4	40 23. 31	0. 39	19. 48	19 40 43. 18	16. 10
	56 Aquilæ	50	11. 4	13. 6	14. 7	24. 5	25. 6	26. 8	28. 0	29. 0	38. 5	39. 9	41. 8	46 26. 71	0. 31	19. 48	19 46 46. 50	14. 07
	B. A. C. 6864	51	- -	- -	- -	57. 7	58. 7	0. 0	21. 4	2. 5	- -	- -	- -	53 0. 06	0. 31	19. 48	19 53 19. 85	15. 38
	B. A. C. 6878	52	5. 4	7. 7	9. 0	19. 5	20. 6	21. 8	23. 0	24. 2	34. 6	36. 0	38. 1	55 21. 81	0. 36	19. 48	19 55 41. 65	— 15. 36
	λ Ursæ Minoris	53	- -	- -	- -	4. 0	54. 5	58. 0	2. 0	53. 5	- -	- -	- -	0 58. 40	7. 25	19. 48	20 1 25. 13	+ 149. 16
	α² Capricorni	54	56. 0	58. 2	59. 4	9. 4	10. 5	11. 7	12. 9	13. 8	23. 6	25. 0	26. 9	10 11. 58	+ 0. 32	+19. 48	20 10 31. 38	— 14. 40

8. Unsteady.
10. Unsteady.
29. Faint; cloudy.
August 5. Stars unsteady.

August 6, 20h. 25m. Image east $\overset{r.}{0.35}$. Clamp west.
Image west 0. 34. Clamp east.

August 3–4, 6h. to 12h. n. = $\overset{s.}{—0.018}$.
4–5. - - - 0. 018.
51h. to 4h. 0. 150.
6. - - - —0. 100.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 5, 9. 5	+ 20. 02	— 0. 019	+ 0. 286
2. 5	19. 82	— 0. 067	- -
6, 18. 8	+ 19. 48	0. 000	- -

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Aug. 6	γ Ceti	1	40.1	42.5	43.6	53.3	54.4	55.6	56.8	57.8	7.2	8.4	10.4	35 55.49	+ 0.29	+19.44	2 36 15.22	− 12.29
	ε Arietis	2	50.4	52.6	53.9	4.2	5.3	6.6	7.9	9.0	19.0	20.3	22.5	51 6.52	0.31	19.44	2 51 26.27	13.48
	α Ceti	3	35.1	37.3	38.5	48.1	49.3	50.5	51.7	52.5	2.0	3.4	5.3	54 50.36	0.29	19.44	2 55 10.09	12.26
Y.	β Arietis	4	15.4	17.6	18.8	29.1	30.3	31.5	32.7	33.7	43.9	45.1	47.2	3 31.39	0.30	19.43	3 3 51.12	13.39
	Moon II	5	12.5	14.5	15.9	26.4	27.5	28.8	30.1	31.2	41.4	42.9	45.0	37 28.75	0.30	19.42	3 37 48.47	. .
	η Tauri	6	47.7	49.9	51.2	1.7	2.9	4.2	5.5	6.6	16.9	18.3	20.4	39 4.12	0.31	19.42	3 39 23.85	13.71
	α Tauri	7	31.0	33.2	34.4	44.5	45.5	46.8	48.1	49.1	58.8	0.2	2.3	27 46.72	0.30	19.40	4 28 6.42	12.96
	α Canis Majoris	8	32.4	34.7	35.8	46.0	47.1	48.4	49.6	50.6	0.5	1.8	3.8	39 48.25	0.30	19.35	6 40 7.90	9.26
	α Canis Minoris	9	34.6	36.8	38.0	47.7	48.7	49.9	51.2	52.1	1.5	2.9	4.8	31 49.84	0.29	19.33	7 32 9.46	11.14
	β Geminorum	†10	20.7	23.2	24.4	35.6	36.7	38.1	39.4	40.6	51.3	52.9	55.0	36 37.99	0.29	19.33	7 36 57.61	13.02
7	Sun II	†11	56.8	59.0	0.2	10.3	11.6	12.7	13.9	15.0	24.7	26.2	28.2	9 12.60	0.29	19.29	9 9 32.18	66.08
	β Leonis	12	30.8	33.0	34.2	44.2	45.3	46.6	47.8	48.8	58.6	59.9	1.9	41 46.46	0.29	19.23	11 42 5.98	− 11.01
	Venus I	13	9.2	11.3	12.5	22.2	23.2	24.3	25.6	26.5	36.0	37.4	39.3	52 24.32	+ 0.29	19.23	11 52 43.84	+ 1.03
	Polaris, S. P.	14	. .	. .	. .	11.0	28.0	41.0	52.0	12.0	. .	. .	. .	9 40.80	− 9.62	19.20	1 9 50.38	− 107.72
	α Tauri	†15	31.4	33.5	34.8	44.9	46.0	47.2	48.4	49.5	59.2	0.6	2.6	27 47.10	+ 0.30	19.11	4 28 6.51	12.99
	Moon II	†16	48.0	50.3	51.5	2.1	3.2	4.5	5.8	7.0	17.4	18.7	20.7	31 4.47	0.31	19.10	4 31 23.88	. .
	α Canis Majoris	17	32.6	34.9	35.9	46.2	47.3	48.5	49.8	50.9	0.7	2.1	4.1	38 48.45	0.30	19.10	6 39 7.85	9.28
	α Canis Minoris	18	35.0	37.0	38.3	47.9	48.9	50.1	51.3	52.3	1.8	3.1	5.0	31 50.06	0.29	19.09	7 32 9.44	11.15
8	Sun I	19	34.3	36.5	37.6	47.7	48.8	49.9	51.1	52.4	2.3	3.6	5.7	10 49.99	0.30	19.08	9 11 9.37	. .
	Sun II	20	46.4	48.4	49.6	59.7	0.8	2.0	3.3	4.3	14.2	15.5	17.5	13 1.97	0.30	19.08	9 13 21.35	. .
	β Leonis	21	31.0	33.1	34.4	44.5	45.5	46.7	47.9	49.0	58.7	0.1	2.2	41 46.65	0.30	19.06	11 42 6.01	− 11.00
	Venus I	†22	24.2	25.4	26.7	28.0	30.5	45.6	47.5	48.8	12.5	13.7	15.6	54 45.32	15.64	19.06	11 55 20.02	+ 1.05
	B. A. C. 5924	23	12.7	15.1	16.4	27.7	29.0	30.4	31.7	32.8	44.1	45.6	47.9	25 30.31	0.40	19.02	17 25 49.73	− 16.28
	η Ophiuchi	24	3.2	5.4	6.5	16.4	17.6	18.7	19.9	20.9	30.6	32.0	34.0	28 18.65	0.27	19.02	17 28 37.94	11.77
	B. A. C. 5960	25	. .	. .	. .	48.2	49.3	50.7	52.2	53.3	. .	. .	. .	30 50.74	0.35	19.02	17 31 10.11	16.36
	* — 32° 9′	26	. .	. .	. .	57.9	59.0	0.4	1.8	3.0	. .	. .	. .	31 0.42	0.35	19.02	17 31 19.79	16.37
	* — 32° 9′	27	. .	. .	. .	8.3	9.5	10.8	12.4	13.5	. .	. .	. .	31 10.90	0.35	19.02	17 31 30.27	16.37
	B. A. C. 5964	28	30.3	32.7	34.1	45.4	46.6	48.1	49.5	50.6	1.9	3.4	5.6	31 48.02	0.40	19.02	17 32 7.44	16.37
	B. A. C. 5989	29	. .	. .	. .	20.0	21.2	22.6	24.1	25.2	. .	. .	. .	34 22.62	0.35	19.02	17 34 41.99	16.43
	B. A. C. 6011	30	46.2	48.7	50.0	1.5	2.9	4.3	5.7	6.8	18.0	19.6	21.9	39 4.15	0.40	19.02	17 39 23.57	16.49
	Lacaille 7459	31	16.5	19.1	20.4	32.0	33.4	34.7	36.2	37.4	48.7	50.2	52.6	41 34.65	0.41	19.02	17 41 54.08	16.65
	B. A. C. 6037	32	35.6	38.3	39.6	51.4	52.6	54.2	55.5	56.8	8.2	9.8	12.2	43 54.02	0.43	19.02	17 44 13.47	16.80
	B. A. C. 6076	33	21.8	24.3	25.8	37.1	38.5	39.9	41.2	42.6	53.9	55.6	57.9	50 39.87	0.41	19.02	17 50 59.30	− 16.66
	δ Ursæ Minoris	34	. .	. .	. .	. .	50.0	9.5	30.5	. .	. .	. .	. .	16 10.00	2.25	19.01	18 16 31.26	+ 68.80
	B. A. C. 6293	35	51.4	53.5	54.6	4.8	6.0	7.2	8.5	9.5	19.4	20.7	22.7	23 7.12	0.33	19.01	18 23 26.46	− 14.91
	λ Aquilæ	36	14.6	16.7	17.9	27.6	28.7	30.0	31.2	32.2	41.7	42.9	45.0	27 29.86	0.30	19.01	18 27 49.17	13.91
	Lacaille 7815	37	0.3	2.7	4.2	15.8	17.0	18.6	19.0	21.2	32.5	34.1	36.6	31 18.36	+ 0.41	19.01	18 31 37.78	16.86
	51 Cephei, S. P.	38	. .	. .	. .	45.5	24.0	58.5	34.0	13.0	. .	. .	. .	34 59.00	− 2.97	19.01	6 35 15.04	96.61
	B. A. C. 6413	39	22.8	25.3	26.4	37.7	38.9	40.2	41.6	42.7	53.6	55.1	57.3	43 40.15	+ 0.38	19.01	18 43 59.54	16.25
	* — 33° 28′	40	. .	. .	. .	3.6	4.8	6.1	7.5	8.9	. .	. .	. .	47 6.18	0.36	19.01	18 47 25.55	16.79
	Lacaille 7926	41	25.3	27.6	29.3	40.7	41.8	43.2	44.7	45.9	57.0	58.7	1.0	47 43.20	0.41	19.01	18 48 2.62	16.80
	Lacaille 7961	42	55.7	58.3	59.7	11.5	12.8	14.3	15.6	16.9	28.4	29.0	32.4	53 14.05	0.42	19.01	18 53 33.48	16.98
	Lacaille 7985	43	6.7	9.2	10.7	22.5	23.7	25.0	26.5	27.7	39.0	40.5	42.8	56 24.94	0.41	19.01	18 56 44.36	16.85
	Lacaille 7998	44	12.7	15.1	16.4	28.2	29.4	30.6	32.2	33.4	45.0	46.5	48.8	59 30.75	0.41	19.01	18 59 50.17	16.85
	B. A. C. 6554	45	. .	. .	. .	20.7	22.0	23.3	24.7	25.9	. .	. .	. .	2 23.32	0.33	19.01	19 2 42.66	16.27
	* — 29° 30′	46	50.2	51.6	53.2	54.5	57.3	. .	. .	8.9	10.3	11.7	13.3	5 32.21	0.19	19.01	19 5 51.41	16.24
	B. A. C. 6569	47	28.7	31.0	32.3	43.4	44.6	46.1	47.3	48.5	59.4	0.8	2.9	5 45.91	0.38	19.01	19 6 5.30	16.23
	Lacaille 8060	48	53.8	56.5	57.7	9.3	10.5	12.0	13.4	14.6	26.0	27.5	29.8	9 11.92	0.41	19.01	19 9 31.34	16.76
	Lacaille 8066	49	38.3	41.7	42.3	53.8	55.0	56.5	57.9	59.1	10.4	11.9	14.3	9 56.47	0.41	19.01	19 10 15.89	16.76
	Lacaille 8077	50	53.2	55.8	57.3	9.1	10.5	11.8	13.4	14.5	26.1	27.6	30.0	12 11.75	0.42	19.01	19 12 31.18	17.01
	Lacaille 8090	51	15.0	17.5	18.9	30.7	32.0	33.6	35.0	36.2	47.8	49.4	51.7	14 33.44	0.42	19.01	19 14 52.87	17.00
	δ Aquilæ	†52	5.0	7.0	8.2	18.1	19.1	20.2	21.4	22.3	32.0	33.3	35.2	18 20.16	0.28	19.01	19 18 39.45	13.10
	Lacaille 8126	53	33.6	35.9	37.4	48.9	50.3	51.7	53.0	54.3	5.5	7.0	9.2	21 51.53	0.41	19.01	19 22 10.95	16.66
	Lacaille 8159	†54	13.7	16.3	17.5	29.1	30.3	31.5	33.0	34.5	45.6	47.7	49.4	27 31.69	+ 0.41	+19.01	19 27 51.11	− 16.64

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 6, 5.3	+ 19.38	− 0.023	+ 0.286
8, 14.6	+ 19.04	− 0.007	. .

10. Very unsteady.
11. Blurred.
15. Through thin clouds.
16. Steady.
22. Through clouds.
52. Unsteady.
54. Very much blurred.

August 8, 20h. 35m. Image east $\overset{r.}{0.35}$. Clamp west.

August 6–7–8. Day observations. n. = $\overset{s.}{0.000}$.
8. 17h. to 6h. — 0.096.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 8	Lacaille 8169	†1	37.3	39.6	41.0	52.6	53.9	55.4	56.7	57.8	9.1	10.6	13.1	28 55.19	+ 0.41	+19.01	19 29 14.61	− 16.66
	B. A. C. 6795	2	43.4	45.8	47.0	58.0	59.2	0.5	1.8	2.9	13.6	15.0	17.1	43 0.39	0.37	19.00	19 43 19.76	15.89
	B. A. C. 6814	3	34.0	36.3	37.6	48.2	49.3	50.6	52.0	53.1	3.3	4.8	7.0	45 50.56	0.36	19.00	19 46 9.92	15.53
	β Aquilæ	4	4.7	6.7	7.8	17.5	18.6	19.8	21.0	22.0	31.4	32.7	34.8	48 19.73	0.27	19.00	19 48 39.00	12.88
	B. A. C. 6877	†5	5.6	8.2	9.5	20.8	22.1	23.5	24.9	26.0	37.4	38.9	41.2	55 23.46	0.40	19.00	19 55 42.86	− 16.43
	λ Ursæ Minoris	6	. .	. .	. .	3.0	54.0	57.0	1.0	52.0	. .	. .	. .	0 57.40	7.46	19.00	20 1 23.86	+ 149.82
	α² Capricorni	7	56.7	58.8	0.0	9.9	10.9	12.2	13.5	14.4	24.2	25.4	27.5	10 12.14	0.32	19.00	20 10 31.46	− 14.41
	O. Arg. S. 20469	8	31.7	33.3	34.6	36.0	38.7	. .	44.9	47.3	48.8	50.2	51.6	16 11.71	0.64	19.00	20 16 31.35	15.47
	O. Arg. S. 20473	9	4.6	6.9	8.2	18.8	20.2	21.3	22.5	23.8	34.2	35.5	37.7	16 21.25	0.36	19.00	20 16 40.61	15.47
	O. Arg. S. 20502	10	24.5	26.8	28.0	38.9	40.1	41.4	42.7	43.8	54.1	55.5	57.7	18 41.23	0.36	19.00	20 19 0.59	15.47
	O. Arg. S. 20578	11	38.0	40.2	41.4	52.3	53.4	54.6	56.1	57.2	6.5	9.0	11.3	23 54.55	0.36	19.00	20 24 13.91	15.46
	ε Delphini	12	9.5	11.5	12.7	22.5	23.7	25.0	26.1	27.0	36.7	38.0	40.0	26 24.79	0.27	19.00	20 26 44.06	12.63
	α Tauri	13	31.6	33.7	35.0	45.1	46.1	47.3	48.6	49.7	59.4	0.8	2.8	27 47.28	+ 0.30	18.90	4 28 6.48	13.02
	τ Tauri	14	. .	. .	. .	57.9	59.2	1.4	17.5	20.0	21.3	22.6	24.1	34 13.00	− 27.52	18.90	4 34 4.38	13.59
	ι Aurigæ	15	30.3	32.9	34.2	45.6	46.8	48.5	49.8	50.9	2.2	3.8	6.1	47 48.28	+ 0.34	18.90	4 48 7.52	14.70
	α Aurigæ	16	57.0	59.7	1.4	15.2	16.8	18.5	20.2	21.7	35.3	37.0	39.9	6 18.43	0.42	18.90	5 6 37.75	16.44
	β Tauri	17	4.4	6.7	8.1	19.0	20.2	21.6	23.0	24.3	34.9	36.4	38.6	17 21.56	0.32	18.90	5 17 40.78	14.10
	β Orionis	18	24.9	26.8	28.1	37.9	39.0	40.1	41.3	42.3	51.8	53.2	55.2	7 40.05	0.29	18.90	5 7 59.24	10.61
	Moon II	†19	6.9	9.0	10.3	21.0	22.2	23.4	24.7	25.7	36.3	37.6	39.7	24 23.35	0.31	18.90	5 24 42.56	. .
9	α Orionis	20	13.3	15.4	16.6	26.3	27.4	28.6	29.8	30.8	40.3	41.6	43.6	47 28.52	0.29	18.70	5 47 47.51	11.93
	Moon II	21	41.8	43.9	45.2	55.7	56.9	58.1	59.4	0.5	10.8	12.3	14.4	16 58.09	0.31	18.70	6 17 17.10	. .
	γ Geminorum	22	15.3	17.4	18.6	28.8	29.9	31.1	32.3	33.4	43.3	44.6	46.6	29 31.03	0.30	18.70	6 29 50.03	12.58
	α Canis Majoris	†23	33.3	35.5	36.7	46.7	47.8	48.9	50.1	51.2	1.2	2.3	4.4	38 48.92	0.30	18.70	6 39 7.92	9.32
	α Canis Minoris	24	35.3	37.5	38.6	48.5	49.5	50.6	51.9	52.8	2.3	3.6	5.7	31 50.57	0.29	18.70	7 32 9.56	11.19
10	Sun I	25	11.7	13.8	15.0	25.0	26.2	27.3	28.6	29.7	39.5	40.8	42.9	18 27.32	0.30	18.70	9 18 46.32	. .
	Sun II	26	23.4	25.5	26.7	36.6	37.6	39.0	40.2	41.3	51.0	52.3	54.2	20 38.89	0.30	18.70	9 20 57.89	. .
	β Leonis	†27	31.5	33.4	34.8	44.7	45.6	46.9	48.4	49.4	59.1	0.5	2.6	41 46.99	0.30	18.70	11 42 5.99	− 10.99
	Venus I	28	48.4	50.3	51.5	. .	. .	. .	. .	. .	. .	. .	. .	59 50.07	+ 13.62	18.70	12 0 22.39	+ 1.08
	Polaris, S. P.	†29	. .	. .	. .	13.0	31.0	44.0	54.0	14.0	. .	. .	. .	9 43.20	− 9.62	18.70	1 9 52.28	− 110.22
	α Virginis	30	27.0	29.0	30.2	40.1	41.1	42.2	43.5	44.5	54.2	55.5	57.5	17 42.25	+ 0.29	18.70	13 18 1.24	11.90
	B. A. C. 5938	31	31.4	33.8	35.1	46.5	47.7	49.1	50.5	51.7	2.8	4.5	6.6	27 49.06	0.38	18.70	17 28 8.14	16.31
	Lacaille 7406	32	4.7	7.2	8.7	21.2	22.5	24.2	25.7	26.8	39.0	40.5	43.1	34 23.96	0.41	18.70	17 34 43.07	17.36
	ι¹ Scorpii	33	26.3	29.0	30.6	43.1	44.5	46.0	47.8	49.0	1.3	3.0	5.5	37 46.01	0.42	18.70	17 38 5.13	17.61
	μ Herculis	34	33.0	35.4	36.6	47.5	48.8	50.2	51.4	52.5	3.2	4.8	6.9	40 50.03	0.29	18.70	17 41 9.02	10.18
	B. A. C. 6037	35	36.0	38.4	39.8	51.6	52.9	54.3	55.8	57.0	8.5	10.0	12.4	43 54.25	0.39	18.70	17 44 13.34	16.77
	* — 34° 32′	36	47.8	50.4	51.9	3.4	4.7	6.1	7.6	8.8	20.3	21.7	24.3	45 6.09	+ 0.39	18.70	17 45 25.18	16.77
	* — 34° 35′	37	. .	. .	. .	40.6	42.3	44.6	2.7	5.5	6.9	8.4	10.0	45 57.62	− 30.80	18.70	17 45 45.52	16.78
	* — 34° 35′	38	1.3	3.7	5.0	16.9	18.1	19.6	21.0	22.2	33.6	35.1	37.6	47 19.46	+ 0.39	18.70	17 47 38.55	16.79
	Lacaille 7516	39	. .	. .	. .	37.7	38.9	40.5	42.0	43.3	. .	. .	. .	49 40.48	0.34	18.70	17 49 59.52	17.16
	* — 36° 58′	40	47.3	50.0	51.4	3.5	4.9	6.3	7.9	9.0	20.9	22.4	24.9	51 6.23	+ 0.40	18.70	17 51 25.33	17.17
	Lacaille 7563	41	. .	. .	. .	27.9	29.7	32.1	51.3	54.2	55.9	57.4	59.2	58 45.96	− 32.44	18.70	17 58 32.22	− 17.47
	δ Ursæ Minoris	42	54.0	28.5	48.5	32.5	48.0	9.5	29.5	45.5	26.5	48.0	21.0	16 8.32	+ 3.85	18.70	18 16 30.87	+ 59.48
	1 Aquilæ	43	14.9	17.0	18.2	28.0	29.1	30.3	31.4	32.5	41.9	43.3	45.3	27 30.17	0.30	18.70	18 27 49.17	− 13.89
	O. Arg. S. 18505	44	25.8	27.3	28.7	30.2	32.9	. .	39.4	42.0	43.4	44.6	46.1	31 6.04	0.62	18.70	18 31 25.36	15.74
	* — 25° 38′	45	53.0	55.1	56.6	. .	. .	. .	. .	. .	22.8	24.2	26.3	31 9.67	0.38	18.70	18 31 28.75	15.74
	O. Arg. S. 18506	46	. .	. .	. .	7.7	8.8	10.2	11.5	12.7	. .	. .	. .	31 10.18	+ 0.29	18.70	18 31 29.17	15.74
	51 Cephei, S. P.	47	. .	. .	. .	. .	26.5	1.5	36.0	. .	. .	. .	. .	35 0.80	− 3.56	18.70	6 35 15.94	97.46
	Brisbane 6501	48	47.3	50.0	51.7	5.4	6.8	8.3	10.0	11.4	24.9	26.7	29.5	41 8.36	+ 0.46	18.70	18 41 27.52	18.67
	β Lyræ	49	27.7	30.1	31.5	43.0	44.3	45.7	47.2	48.4	59.6	1.3	3.5	44 45.66	0.30	18.70	18 45 4.66	10.04
	B. A. C. 6554	50	6.2	8.5	9.9	21.0	22.3	23.7	25.1	26.2	37.0	38.5	40.7	2 23.56	0.36	18.70	19 2 42.62	16.26
	B. A. C. 6568	51	22.9	25.3	26.5	37.7	38.9	40.3	41.6	42.8	53.7	55.2	57.5	5 40.22	0.36	18.70	19 5 59.28	16.30
	Lacaille 8060	52	54.1	56.7	58.1	9.6	10.8	12.2	13.8	15.0	26.3	27.9	30.1	9 12.24	0.38	18.70	19 9 31.32	16.75
	Lacaille 8077	53	53.6	56.0	57.5	9.3	10.5	12.0	13.5	14.8	26.4	27.9	30.4	12 11.99	0.39	18.70	19 12 31.08	17.00
	Lacaille 8090	54	15.4	17.8	19.2	31.1	32.4	33.8	35.4	36.5	48.0	49.7	52.1	14 33.76	0.39	18.70	19 14 52.85	16.99
	χ⁵ Sagittarii	55	40.9	43.3	44.6	55.0	56.3	57.6	58.9	0.0	10.3	11.7	13.9	16 57.50	+ 0.34	+18.70	19 17 16.54	− 15.58

1. Blurred.
5. Blurred.
19. Good observation.
23. Unsteady.
27. Very unsteady.
29. Unsteady.

August 9-10, 5h. to 14h. n. = 0.000. (s.)
17h. to 21h. — 0.058.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 8, 4.9	+ 18.90	— 0.009	+ 0.286

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
11	δ Ursæ Minoris	1	. .	. .	. .	33. 0	48. 5	8. 7	29. 0	45. 5	. .	. .	. .	16 8. 94	+ 2. 58	+18. 81	18 16 30. 33	+ 59. 83
	O. Arg. S. 18248	2	. .	. .	. .	39. 7	40. 7	42. 0	43. 1	44. 3	. .	. .	. .	19 41. 96	+ 0. 30	18. 81	18 20 1. 07	— 14. 82
	B. A. C. 6274	3	. .	. .	. .	. .	. .	. .	21. 6	24. 4	25. 9	27. 2	29. 1	21 25. 64	— 39. 36	18. 81	18 21 5. 09	16. 75
	Lacaille 7757	4	. .	. .	. .	23. 0	24. 6	26. 9	45. 3	48. 2	49. 6	51. 0	52. 8	23 40. 18	— 31. 13	18. 81	18 23 27. 86	17. 04
	O. Arg. S. 18395	5	33. 0	34. 9	36. 3	46. 3	47. 5	48. 7	50. 0	51. 1	0. 9	2. 3	4. 3	25 48. 66	+ 0. 35	18. 81	18 26 7. 82	14. 81
	1 Aquilæ	6	. .	. .	. .	41. 9	43. 2	45. 2	0. 3	2. 5	3. 7	4. 9	6. 4	27 56. 01	— 25. 63	18. 81	18 27 49. 19	13. 88
	Lacaille 7823	7	50. 2	52. 7	54. 2	6. 8	8. 1	9. 7	11. 4	12. 6	25. 6	26. 6	29. 1	33 9. 73	+ 0. 47	18. 81	18 33 29. 01	17. 69
	Lacaille 7838	8	34. 2	36. 9	38. 2	50. 0	51. 4	52. 7	54. 3	55. 5	7. 1	9. 0	11. 3	35 52. 78	0. 45	18. 81	18 36 12. 04	17. 14
	Lacaille 7858	9	31. 1	33. 7	35. 1	47. 3	48. 5	50. 0	51. 6	52. 9	4. 6	6. 3	8. 7	38 49. 98	0. 46	18. 81	18 39 9. 25	17. 32
	Lacaille 7901	10	1. 2	3. 7	5. 1	17. 2	18. 6	20. 0	21. 5	22. 8	34. 5	36. 1	38. 5	44 19. 93	+ 0. 45	18. 81	18 44 39. 19	17. 21
	51 Cephei, S. P.	†11	40. 0	13. 0	46. 0	19. 5	. .	. .	. .	. .	. .	. .	. .	46 59. 62	— 12 1. 40	18. 81	6 35 17. 03	97. 92
	Weisse 1294	12	7. 7	9. 8	10. 9	20. 7	21. 9	23. 0	24. 2	25. 2	34. 7	36. 0	38. 0	51 22. 92	+ 0. 32	18. 81	18 51 42. 05	14. 03
	Weisse 1443	13	. .	. .	. .	52. 0	53. 2	54. 4	55. 5	56. 6	. .	. .	. .	56 54. 34	+ 0. 27	18. 81	18 57 13. 42	14. 01
	Weisse 1449	14	. .	. .	. .	3. 6	4. 7	5. 9	7. 1	8. 1	. .	. .	. .	57 5. 82	+ 0. 27	18. 81	18 57 24. 90	14. 02
	Lacaille 7998	†15	. .	. .	. .	45. 1	46. 6	48. 8	6. 9	9. 7	11. 2	12. 5	14. 2	0 1. 88	— 30. 54	18. 81	18 59 50. 15	16. 84
	O. Arg. N. 18967	16	. .	. .	. .	46. 4	49. 3	52. 8	56. 2	58. 9	.	. .	. .	2 52. 72	+ 0. 46	18. 82	19 3 12. 00	2. 08
	O. Arg. N. 18980	17	. .	. .	. .	24. 1	26. 9	30. 2	33. 6	36. 5	. .	. .	. .	3 30. 26	0. 45	18. 82	19 3 49. 53	2. 17
	Lacaille 8045	18	17. 2	19. 6	20. 9	32. 6	33. 8	35. 3	36. 7	37. 9	49. 4	50. 9	53. 3	6 35. 24	0. 43	18. 82	19 6 54. 49	16. 79
	Lacaille 8051	19	3. 3	5. 8	7. 1	18. 7	20. 0	21. 6	22. 9	24. 0	35. 4	37. 1	39. 4	7 21. 39	+ 0. 43	18. 82	19 7 40. 64	16. 79
	ω Aquilæ	20	. .	. .	. .	. .	. .	. .	38. 4	40. 6	42. 0	43. 1	44. 5	11 41. 72	— 33. 52	18. 82	19 11 27. 02	12. 30
	B. A. C. 6639	21	45. 0	47. 3	48. 6	59. 8	1. 1	2. 5	3. 8	5. 0	15. 9	17. 3	19. 5	18 2. 35	+ 0. 40	18. 82	19 18 21. 57	16. 27
	B. A. C. 6665	22	25. 3	27. 8	29. 0	40. 3	41. 5	42. 9	44. 3	45. 4	56. 5	58. 0	0. 3	20 42. 85	0. 41	18. 82	19 21 2. 08	16. 40
	B. A. C. 6680	23	13. 3	15. 6	16. 9	28. 1	29. 5	30. 8	32. 3	33. 2	44. 3	45. 9	48. 3	23 30. 75	0. 41	18. 82	19 23 49. 98	16. 40
	B. A. C. 6693	24	47. 5	49. 9	51. 2	2. 7	3. 8	5. 4	6. 8	7. 8	19. 0	20. 5	22. 9	26 5. 23	0. 42	18. 82	19 26 24. 47	16. 49
	Lacaille 8169	25	37. 4	39. 8	41. 2	52. 6	54. 0	55. 4	56. 9	58. 1	9. 4	10. 9	13. 3	28 55. 36	0. 43	18. 82	19 29 14. 61	16. 66
	Lacaille 8185	26	9. 2	11. 7	13. 2	25. 4	26. 5	28. 1	29. 6	30. 8	42. 6	44. 4	46. 8	32 28. 03	0. 45	18. 82	19 32 47. 30	17. 21
	* + 8° 3′	27	11. 5	12. 7	14. 0	15. 3	17. 7	. .	. .	. .	. .	. .	. .	35 14. 24	34. 28	18. 82	19 36 7. 34	12. 66
	Dorpat 2562, (1st *)	28	36. 5	38. 7	39. 8	. .	. .	. .	. .	. .	3. 5	4. 9	6. 7	35 51. 68	0. 33	18. 82	19 36 10. 83	12. 66
	Dorpat 2562, (2d *)	29	. .	. .	. .	51. 2	52. 4	53. 6	54. 8	55. 8	. .	. .	. .	35 53. 56	0. 24	18. 82	19 36 12. 62	— 12. 66
	λ Ursæ Minoris	30	. .	. .	. .	. .	52. 5	56. 5	58. 0	. .	. .	. .	. .	0 55. 67	+ 7. 98	18. 82	20 1 22. 47	+ 151. 75
	O. Arg. S. 20309	31	. .	. .	. .	32. 2	33. 7	35. 9	52. 3	54. 9	56. 3	57. 5	59. 0	4 47. 72	— 28. 00	18. 82	20 4 38. 54	— 15. 56
	α² Capricorni	32	56. 9	59. 0	0. 2	. .	11. 2	12. 4	13. 6	. .	24. 4	25. 6	27. 7	10 12. 33	+ 0. 34	18. 82	20 10 31. 49	14. 41
	O. Arg. S. 20429	33	51. 5	53. 8	55. 1	5. 7	6. 8	8. 1	9. 4	10. 5	20. 9	22. 3	24. 4	13 8. 05	0. 37	18. 82	20 13 27. 24	15. 39
	O. Arg. S. 20469	34	32. 1	33. 4	34. 8	36. 2	38. 7	. .	45. 0	47. 6	48. 9	50. 2	51. 9	16 11. 88	0. 66	18. 82	20 16 31. 36	15. 47
	O. Arg. S. 20473	35	4. 9	7. 0	8. 2	18. 9	20. 2	21. 4	22. 7	23. 8	34. 3	35. 7	37. 9	16 21. 36	0. 38	18. 82	20 16 40. 56	15. 48
	ρ Capricorni	36	31. 9	34. 1	35. 4	45. 6	46. 8	47. 9	49. 2	50. 3	0. 3	1. 5	3. 5	20 47. 86	0. 35	18. 82	20 21 7. 03	14. 80
	O. Arg. S. 20578	37	38. 1	40. 3	41. 5	52. 3	53. 5	54. 7	56. 2	57. 3	7. 8	9. 1	11. 4	23 54. 75	0. 38	18. 82	20 24 13. 95	15. 47
	Lacaille 8492	38	48. 0	50. 5	51. 8	3. 1	4. 3	5. 6	7. 1	8. 2	19. 2	20. 7	23. 1	26 5. 60	0. 41	18. 82	20 26 24. 83	16. 05
	B. A. C. 7108	39	11. 3	13. 6	14. 8	25. 6	26. 7	28. 0	29. 3	30. 5	40. 8	42. 3	44. 5	29 27. 95	0. 38	18. 82	20 29 47. 15	15. 46
	Lacaille 8517	40	. .	. .	. .	26. 6	27. 9	29. 4	30. 8	32. 0	. .	. .	. .	31 29. 34	0. 37	18. 82	20 31 48. 53	16. 35
	O. Arg. S. 20805	41	43. 8	46. 2	47. 4	58. 0	59. 2	0. 5	1. 8	2. 8	13. 3	14. 6	16. 8	37 0. 40	0. 38	18. 83	20 37 19. 61	15. 29
	B. A. C. 7180	†42	. .	. .	. .	57. 0	58. 0	59. 2	0. 8	1. 7	. .	. .	. .	37 59. 34	0. 33	18. 83	20 38 18. 50	15. 27
	B. A. C. 7216	43	54. 1	56. 4	57. 7	8. 4	9. 5	10. 8	12. 2	13. 3	23. 7	25. 2	27. 3	42 10. 78	0. 38	18. 83	20 42 29. 99	15. 37
	μ Aquarii	44	45. 7	47. 9	49. 0	58. 6	59. 8	1. 0	2. 2	3. 2	12. 8	14. 1	16. 0	45 0. 94	0. 32	18. 83	20 45 20. 09	14. 06
	B. A. C. 7252	45	7. 1	9. 4	10. 6	21. 5	22. 7	24. 1	25. 4	26. 5	37. 2	38. 6	40. 7	48 23. 98	0. 39	18. 83	20 48 43. 20	15. 45
	Lacaille 8647	46	50. 2	52. 5	53. 9	4. 9	6. 1	7. 4	8. 8	9. 9	20. 6	22. 2	24. 3	53 7. 35	0. 40	18. 83	20 53 26. 58	15. 56
	Lacaille 8660	47	27. 9	30. 3	31. 6	42. 6	43. 8	45. 2	46. 5	47. 6	58. 4	59. 8	2. 1	54 45. 07	0. 40	18. 83	20 55 4. 30	15. 53
	δ Microscopii	48	12. 3	14. 8	16. 1	27. 2	28. 5	29. 9	31. 3	32. 5	43. 4	45. 0	47. 3	57 29. 85	0. 41	18. 83	20 57 49. 09	15. 74
	3 Piscis Australis	49	37. 9	40. 3	41. 5	52. 6	53. 7	55. 0	56. 3	57. 6	8. 3	9. 7	12. 0	4 54. 99	0. 40	18. 83	21 5 14. 22	15. 43
	ζ Cygni	50	33. 9	36. 3	37. 7	48. 7	49. 9	51. 3	52. 8	53. 8	4. 6	6. 1	8. 4	6 51. 23	0. 29	18. 83	21 7 10. 35	11. 67
	Lacaille 8769	51	16. 4	18. 7	20. 1	31. 0	32. 4	33. 6	35. 0	36. 2	47. 1	48. 6	50. 7	10 33. 62	0. 40	18. 83	21 10 52. 85	15. 48
	α Cephei	52	31. 8	36. 1	38. 5	59. 2	1. 4	3. 9	6. 5	8. 5	28. 6	31. 6	35. 8	15 3. 81	0. 45	18. 83	21 15 23. 09	8. 79
	β Aquarii	53	50. 7	52. 7	53. 9	3. 6	4. 6	5. 7	6. 9	7. 9	17. 6	18. 8	20. 9	24 5. 75	0. 31	18. 83	21 24 24. 89	13. 76
	β Cephei	54	54. 7	0. 4	3. 8	31. 9	35. 3	38. 8	42. 4	44. 7	12. 6	16. 3	22. 4	26 38. 48	0. 60	18. 83	21 26 57. 91	7. 54
	ξ Aquarii	55	57. 3	59. 4	0. 6	10. 3	11. 5	12. 6	13. 8	14. 8	24. 4	25. 7	27. 7	30 12. 56	+ 0. 32	+18. 83	21 30 31. 71	— 13. 89

11. Steady.
15. Second and larger.
42. Sec. recorded 10s. less than that of Lacaille 8556.

August 11, 21h. 40m. Image east $0^{r}.56$. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 11, 8.7	+ 18. 88	— 0. 005	+ 0. 300

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 11	γ Geminorum	1	15. 2	17. 7	18. 6	28. 6	29. 6	30. 8	32. 1	33. 1	43. 1	44. 3	46. 4	29 30. 86	+ 0. 30	+18. 89	6 29 50. 05	— 12. 62
	α Canis Majoris	2	33. 1	35. 3	36. 4	46. 5	47. 6	48. 8	50. 0	51. 2	0. 9	2. 2	4. 3	38 48. 75	0. 32	18. 89	6 39 7. 96	9. 36
	α Canis Minoris	3	35. 2	37. 4	38. 5	48. 2	49. 3	50. 4	51. 6	52. 6	2. 2	3. 4	5. 4	31 50. 38	0. 30	18. 88	7 32 9. 56	11. 22
Y.	β Geminorum	4	21. 5	23. 8	25. 2	36. 2	37. 4	38. 7	40. 0	41. 1	51. 9	53. 4	55. 6	36 38. 62	0. 32	18. 88	7 36 57. 82	13. 12
12	Sun I	5	46. 3	48. 3	49. 4	59. 6	0. 6	1. 8	3. 1	4. 2	14. 0	15. 3	17. 5	26 1. 83	0. 30	18. 88	9 26 21. 01	. .
	Sun II	6	57. 7	59. 7	0. 8	10. 7	11. 9	13. 1	14. 4	15. 4	25. 4	26. 5	28. 5	28 13. 10	0. 30	18. 88	9 28 32. 28	. .
	β Leonis	7	31. 1	33. 4	34. 6	44. 5	45. 6	46. 8	48. 2	49. 2	59. 0	0. 1	2. 4	41 46. 81	0. 30	18. 86	11 42 5. 97	— 10. 99
	Venus I	8	36. 6	38. 7	39. 8	49. 6	50. 6	51. 8	52. 9	54. 0	3. 5	4. 8	6. 8	4 51. 74	0. 31	18. 86	12 5 10. 91	+ 1. 11
	η Virginis	9	21. 6	23. 7	24. 9	34. 6	35. 5	36. 8	37. 9	38. 9	48. 4	49. 7	51. 7	12 36. 70	0. 30	18. 86	12 12 55. 86	— 11. 20
	Polaris	10	. .	. .	. .	15. 0	54. 5	46. 5	. .	. .	. .	. .	. .	4 55. 75	4 39. 68	18. 86	13 9 54. 29	111. 67
13	γ Geminorum	11	14. 4	16. 6	17. 8	27. 8	29. 0	30. 1	31. 3	32. 6	42. 3	43. 6	45. 7	29 30. 11	0. 30	19. 68	6 29 50. 09	12. 66
	α Canis Majoris	12	32. 3	34. 5	35. 8	45. 8	46. 8	48. 1	49. 4	50. 4	0. 3	1. 6	3. 7	38 48. 06	0. 32	19. 69	6 39 8. 07	9. 40
	α² Geminorum	13	15. 6	18. 0	19. 5	30. 9	32. 1	33. 5	34. 9	36. 1	47. 2	48. 7	51. 1	25 33. 42	0. 33	19. 70	7 25 53. 45	13. 76
	α Canis Minoris	14	34. 6	36. 5	37. 8	47. 4	48. 5	49. 6	50. 9	52. 0	1. 2	2. 6	4. 6	31 49. 61	0. 30	19. 70	7 32 9. 61	11. 26
	β Geminorum	15	20. 7	23. 1	24. 3	35. 3	36. 5	37. 9	39. 2	40. 3	51. 1	52. 5	54. 8	36 37. 79	0. 32	19. 70	7 36 57. 81	13. 16
14	Sun I	16	17. 8	20. 0	21. 1	31. 1	32. 2	33. 4	34. 6	35. 7	45. 5	46. 8	48. 9	33 33. 37	0. 38	19. 72	9 33 53. 47	. .
	Sun II	17	28. 6	31. 0	32. 1	42. 1	43. 1	44. 4	45. 7	46. 7	56. 5	57. 8	59. 8	35 44. 35	+ 0. 38	19. 72	9 36 4. 45	. .
	β Leonis	†18	. .	. .	. .	43. 6	44. 7	45. 8	47. 2	48. 3	58. 0	59. 3	1. 3	41 51. 02	— 4. 79	19. 73	11 42 5. 96	— 10. 97
	Venus I	†19	9. 3	11. 3	12. 7	. .	. .	. .	. .	. .	36. 2	37. 5	39. 5	9 24. 42	+ 0. 41	19. 74	12 9 44. 57	+ 1. 14
	γ Geminorum	20	13. 8	16. 1	17. 2	27. 3	28. 4	29. 6	30. 8	31. 8	41. 7	43. 1	45. 1	29 29. 54	0. 40	20. 19	6 29 50. 13	— 12. 70
	α Canis Majoris	21	30. 8	34. 0	35. 2	45. 1	46. 3	47. 5	48. 8	49. 8	59. 5	1. 0	3. 1	38 47. 37	0. 37	20. 20	6 39 7. 94	9. 42
	α Canis Minoris	22	33. 9	36. 0	37. 2	46. 7	47. 9	49. 1	50. 3	51. 4	0. 8	2. 1	4. 1	31 49. 05	0. 38	20. 21	7 32 9. 64	11. 28
	β Geminorum	23	20. 0	22. 5	23. 7	34. 8	36. 0	37. 4	38. 7	39. 7	50. 5	52. 0	54. 3	36 37. 24	0. 45	20. 21	7 36 57. 90	13. 18
15	β Leonis	24	29. 6	30. 8	33. 0	43. 1	44. 3	45. 4	46. 6	47. 7	57. 4	58. 7	0. 9	41 45. 23	0. 40	20. 29	11 42 5. 92	— 10. 97
	Venus I	25	19. 9	21. 9	23. 2	32. 8	33. 9	35. 1	36. 3	37. 3	45. 7	47. 9	49. 9	11 34. 90	+ 0. 37	20. 30	12 11 55. 57	+ 1. 16
	Polaris, S. P.	26	. .	. .	. .	20. 5	. .	52. 0	. .	21. 0	. .	. .	. .	9 51. 17	— 15. 50	20. 32	1 9 55. 99	— 113. 60
	κ Virginis	27	25. 2	27. 3	28. 5	38. 4	39. 3	40. 5	41. 7	42. 8	52. 5	53. 6	55. 8	17 40. 51	+ 0. 37	20. 32	13 18 1. 20	11. 84
	α Ophiuchi	28	1. 7	3. 8	5. 0	15. 0	16. 1	17. 3	18. 4	19. 5	29. 2	30. 5	32. 5	28 17. 18	0. 35	20. 40	17 28 37. 93	11. 68
	B. A. C. 5966	29	32. 0	34. 3	35. 6	46. 6	47. 9	49. 3	50. 6	51. 7	2. 4	3. 9	6. 0	31 49. 12	0. 47	20. 40	17 32 9. 99	15. 72
	B. A. C. 5989	30	23. 6	25. 9	27. 1	37. 6	38. 7	40. 0	41. 3	42. 3	52. 8	54. 0	56. 3	35 39. 96	0. 45	20. 40	17 36 0. 81	15. 24
	* — 23° 38′	31	47. 6	49. 8	51. 1	1. 6	2. 7	4. 0	5. 2	6. 4	16. 7	18. 1	20. 4	38 3. 95	0. 45	20. 40	17 38 24. 80	15. 25
	B. A. C. 6023	32	1. 9	4. 2	5. 4	16. 0	17. 2	18. 4	19. 7	20. 8	31. 3	32. 7	34. 8	41 18. 40	0. 45	20. 40	17 41 39. 25	15. 33
	Lacaille 7469	33	. .	. .	. .	22. 0	23. 4	24. 7	25. 9	27. 1	. .	. .	. .	43 24. 62	0. 44	20. 41	17 43 45. 47	16. 23
	O. Arg. S. 17349	34	30. 3	32. 5	33. 7	44. 7	45. 9	47. 0	48. 4	49. 6	0. 2	1. 7	3. 9	46 47. 08	0. 47	20. 41	17 47 7. 96	15. 69
	B. A. C. 6059	35	18. 1	20. 4	21. 7	32. 5	33. 7	35. 0	36. 3	37. 4	47. 9	49. 4	51. 6	47 34. 91	0. 47	20. 41	17 47 55. 79	15. 67
	B. A. C. 6074 (1st *)	†36	. .	. .	. .	58. 6	59. 9	1. 2	2. 7	3. 8	. .	. .	. .	50 1. 24	+ 0. 44	20. 41	17 50 22. 09	16. 13
	B. A. C. 6074 (2d *)	†37	. .	. .	. .	15. 1	16. 7	18. 8	36. 1	38. 8	40. 2	41. 5	43. 1	50 31. 29	— 29. 23	20. 41	17 50 22. 47	16. 13
	O. Arg. S. 17510	38	18. 8	20. 2	21. 5	22. 9	25. 5	. .	31. 5	33. 9	35. 3	36. 5	38. 0	53 58. 41	+ 0. 72	20. 41	17 54 19. 54	15. 41
	O. Arg. S. 17512	39	. .	. .	. .	57. 3	58. 5	59. 9	1. 2	2. 3	. .	. .	. .	53 59. 84	0. 40	20. 41	17 54 20. 65	15. 41
	7 Sagittarii	40	. .	. .	. .	8. 5	9. 5	11. 0	12. 4	13. 4	. .	. .	. .	54 10. 96	0. 40	20. 41	17 54 31. 77	15. 41
	γ² Sagittarii	41	26. 8	29. 2	30. 4	. .	42. 8	44. 3	45. 6	. .	57. 7	59. 2	1. 5	56 44. 17	0. 50	20. 41	17 57 5. 08	16. 17
	B. A. C. 6131	42	. .	. .	. .	48. 5	49. 8	51. 2	52. 5	53. 7	. .	. .	. .	59 51. 14	0. 44	20. 41	18 0 11. 99	16. 30
	B. A. C. 6160	43	42. 3	44. 6	45. 9	57. 1	58. 3	59. 6	1. 1	2. 1	13. 0	14. 4	16. 5	2 59. 54	0. 48	20. 41	18 3 20. 43	16. 03
	* — 29° 8′	44	17. 9	20. 2	21. 5	32. 6	33. 7	35. 2	36. 5	37. 6	48. 5	49. 9	52. 1	5 35. 06	0. 48	20. 41	18 5 55. 95	16. 15
	B. A. C. 6191	45	9. 4	11. 8	13. 2	24. 1	25. 3	26. 5	27. 9	28. 9	39. 8	41. 3	43. 4	8 26. 51	0. 47	20. 41	18 8 47. 39	15. 96
	B. A. C. 6214	46	8. 6	11. 0	12. 3	23. 2	24. 3	25. 6	26. 9	27. 9	38. 5	40. 0	42. 1	12 25. 49	0. 46	20. 42	18 12 46. 37	— 15. 71
	δ Ursæ Minoris	47	. .	. .	. .	26. 5	45. 0	4. 5	25. 0	43. 0	. .	. .	. .	16 4. 80	3. 76	20. 42	18 16 28. 98	+ 61. 14
	B. A. C. 6273	48	21. 8	24. 3	25. 5	36. 3	37. 5	38. 7	39. 9	41. 1	51. 5	53. 0	55. 1	20 38. 60	0. 46	20. 42	18 20 59. 48	— 15. 63
	α Lyræ	49	40. 9	43. 6	45. 1	57. 5	58. 9	0. 4	2. 1	3. 2	15. 4	17. 0	19. 5	32 0. 33	+ 0. 39	20. 42	18 32 21. 14	9. 27
	51 Cephei, S. P.	50	-	. .	. .	49. 0	28. 0	2. 5	38. 0	17. 0	. .	. .	. .	35 2. 90	— 4. 64	20. 42	6 35 18. 68	99. 33
	B. A. C. 6408	51	-	-	. .	34. 4	35. 6	37. 0	38. 3	39. 4	. .	. .	. .	42 36. 94	+ 0. 42	20. 42	18 42 57. 78	15. 92
	B. A. C. 6546	52	39. 3	41. 6	42. 9	53. 8	55. 0	56. 4	57. 9	58. 9	9. 5	11. 0	13. 1	0 56. 31	0. 47	20. 43	19 1 17. 21	15. 93
	B. A. C. 6562	53	14. 2	16. 5	17. 8	28. 6	29. 8	31. 2	32. 4	33. 5	44. 0	45. 4	47. 7	4 31. 01	+ 0. 46	+20. 43	19 4 51. 90	— 15. 79

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 13, 7. 9	+ 19. 70	+ 0. 009	+ 0. 300
14, . .	. .	. .	+ 0. 370
15, 14. 3	+ 20. 34	+ 0. 019	. .

18. Hurried; through clouds.
19. Through clouds.
36–37. Close double.

August 15. 20h. 20m. Image east $\overset{r.}{0.49}$. Clamp west.
Image west 0. 41. Clamp east.
Reduced the collimation.

August 12–13. . . . . . n. = $\overset{s.}{—0.042}$.
14. . . . . . —0. 010.
14–15, 6h. to 14h. +0. 053.
15, 17h. to 21h. —0. 100.

.TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
g. 15	ω Aquilæ	1	50. 9	52. 8	54. 0	3. 9	4. 9	6. 1	7. 3	8. 4	17. 9	19. 3	21. 3	11 6. 07	+ 0. 35	+20. 43	19 11 26. 85	— 12. 27
	χ^3 Sagittari	2	39. 1	41. 5	42. 7	53. 4	54. 4	55. 7	57. 0	58. 2	8. 3	9. 9	12. 0	16 55. 65	0. 45	20. 44	19 17 16. 54	15. 56
	B. A. C. 6666	3	50. 4	52. 8	53. 9	4. 9	6. 0	7. 4	8. 8	9. 9	20. 6	22. 0	24. 2	21 7. 35	0. 47	20. 44	19 21 28. 26	15. 91
Y.	B. A. C. 6685	4	55. 8	58. 2	59. 3	10. 2	11. 3	12. 6	13. 9	15. 1	25. 6	27. 1	29. 3	24 12. 58	0. 46	20. 44	19 24 33. 48	15. 77
	h^1 Sagittari	5	9. 5	11. 8	13. 0	23. 7	24. 9	26. 2	27. 5	28. 7	39. 1	40. 6	42. 6	27 26. 15	0. 46	20. 44	19 27 47. 05	15. 64
	κ Aquilæ	6	59. 3	1. 5	2. 6	12. 4	13. 5	14. 6	15. 8	16. 9	26. 4	27. 7	29. 8	29 14. 59	0. 39	20. 44	19 29 35. 42	13. 90
	B. A. C. 6738	7	30. 7	33. 0	34. 2	45. 0	46. 1	47. 5	48. 8	49. 9	0. 3	1. 6	4. 0	33 47. 37	0. 46	20. 44	19 34 8. 27	15. 65
	O. Arg. S. 19978	8	40. 6	42. 1	43. 6	44. 9	47. 7	. .	56. 5	59. 0	0. 3	1. 6	3. 4	40 21. 97	0. 77	20. 44	19 40 43. 18	16. 08
	B. A. C. 6795	9	42. 0	44. 4	45. 6	56. 4	57. 7	58. 9	0. 2	1. 4	12. 2	13. 4	15. 7	42 58. 90	0. 47	20. 44	19 43 19. 81	15. 88
	β Aquilæ	10	3. 0	5. 1	6. 3	15. 9	17. 2	18. 2	19. 5	20. 5	30. 0	31. 4	33. 3	48 18. 22	0. 36	20. 44	19 48 39. 02	12. 86
	B. A. C. 6854	11	33. 6	36. 0	37. 2	48. 4	49. 5	50. 9	52. 3	53. 5	4. 3	5. 7	8. 0	51 50. 85	0. 48	20. 45	19 52 11. 78	16. 02
	c Sagittarii	12	. .	. .	. .	55. 3	56. 4	57. 7	59. 1	0. 2	. .	. .	. .	53 57. 74	0. 42	20. 45	19 54 18. 61	15. 91
	B. A. C. 6888	13	17. 2	19. 5	20. 8	31. 7	32. 8	34. 1	35. 5	36. 6	47. 3	48. 7	50. 9	56 34. 10	0. 47	20. 45	19 56 55. 02	— 15. 80
	λ Ursæ Minoris	14	. .	. .	. .	54. 0	46. 0	. .	52. 5	41. 0	. .	. .	. .	0 48. 38	11. 68	20. 45	20 1 20. 51	+ 154. 10
	B. A. C. 6947	15	11. 3	13. 6	14. 9	25. 8	27. 0	28. 4	29. 6	30. 8	41. 5	42. 8	45. 1	6 28. 26	0. 47	20. 45	20 6 49. 18	— 15. 79
	α^1 Capricorni	16	. .	. .	. .	44. 4	45. 5	46. 6	47. 9	48. 9	. .	.	. .	9 46. 66	0. 35	20. 45	20 10 7. 46	14. 40
	α^2 Capricorni	17	55. 3	57. 2	58. 5	8. 3	9. 3	10. 5	11. 7	12. 8	22. 6	23. 9	26. 0	10 10. 55	0. 40	20. 45	20 10 31. 40	14. 41
17	Polaris, S. P.	18	. .	. .	. .	1. 0	18. 0	30. 0	40. 5	59. 0	. .	. .	. .	9 29. 70	6. 55	20. 92	1 9 57. 17	114. 90
	α Virginis	19	25. 1	27. 1	28. 4	38. 0	39. 0	40. 2	41. 5	42. 5	. .	. .	. .	17 35. 22	+ 4. 99	20. 92	13 18 1. 13	11. 82
	ζ Aquilæ	20	. .	. .	. .	1. 8	2. 9	5. 1	20. 6	23. 3	24. 5	25. 8	27. 1	59 16. 39	— 26. 96	21. 12	18 59 10. 55	11. 97
	B. A. C. 6565	21	53. 4	55. 6	56. 8	7. 5	8. 7	9. 9	11. 3	12. 6	23. 4	24. 6	27. 0	5 10. 07	+ 0. 05	21. 12	19 5 31. 24	15. 89
	B. A. C. 6578	22	13. 1	15. 4	16. 7	27. 3	28. 4	29. 6	31. 0	32. 1	43. 0	44. 2	46. 4	7 29. 74	+ 0. 04	21. 12	19 7 50. 90	15. 74
	ω Aquilæ	23	50. 8	52. 8	53. 9	3. 6	4. 6	5. 7	7. 0	8. 1	18. 0	19. 2	27. 2	11 5. 90	— 0. 16	21. 13	19 11 26. 87	12. 26
	O. Arg. S. 19609	24	. .	. .	.	54. 7	55. 9	57. 2	58. 4	59. 7	. .	. .	. .	20 57. 18	+ 0. 09	21. 13	19 21 18. 40	15. 76
	h^2 Sagittarii	25	. .	. .	. .	3. 2	4. 3	5. 5	6. 8	8. 0	. .	. .	. .	28 5. 58	0. 09	21. 14	19 28 26. 81	15. 65
	53 Sagittarii	26	2. 4	4. 6	5. 8	16. 3	17. 4	18. 7	20. 0	21. 1	. .	. .	. .	31 13. 29	+ 5. 48	21. 14	19 31 39. 91	15. 48
	B. A. C. 6727	27	. .	. .	. .	33. 6	34. 8	36. 2	37. 5	38. 7	49. 2	50. 5	52. 7	31 41. 65	— 5. 38	21. 14	19 31 57. 41	15. 48
	Dorpat 2562	28	15. 2	16. 7	17. 9	19. 0	21. 4	. .	49. 0	50. 3	51. 4	52. 5	53. 6	35 34. 70	+ 16. 62	21. 14	19 36 12. 46	12. 63
	β Aquilæ	29	.	. .	. .	15. 6	16. 7	17. 9	19. 2	20. 2	. .	. .	. .	48 17. 92	— 0. 08	21. 15	19 48 38. 99	— 12. 85
	λ Ursæ Minoris	30	. .	. .	. .	21. 0	13. 0	17. 0	18. 0	11. 0	. .	. .	. .	1 16. 00	19. 36	21. 16	20 1 17. 80	+ 155. 56
	α^2 Capricorni	31	54. 9	57. 0	58. 3	8. 0	9. 0	10. 3	11. 6	12. 5	22. 4	23. 7	25. 8	10 10. 32	0. 03	21. 16	20 10 31. 45	— 14. 41
	Lacaille 8414	32	. .	. .	.	30. 6	32. 0	34. 6	52. 7	54. 6	57. 0	58. 6	0. 2	12 47. 54	— 31. 00	21. 16	20 12 37. 70	16. 41
	B. A. C. 7011	33	43. 8	46. 2	47. 6	58. 6	59. 6	1. 0	2. 4	3. 5	14. 7	15. 9	18. 5	16 1. 07	+ 0. 07	21. 17	20 16 22. 31	15. 96
	B. A. C. 7026	34	34. 5	36. 8	38. 4	49. 1	50. 3	51. 6	53. 0	54. 1	5. 3	6. 6	9. 0	17 51. 70	0. 07	21. 17	20 18 12. 94	15. 95
	B. A. C. 7057	35	59. 5	1. 8	3. 1	14. 1	15. 1	16. 5	17. 8	19. 0	30. 3	31. 5	33. 9	22 16. 60	0. 07	21. 17	20 22 37. 84	15. 93
	B. A. C. 7077	36	9. 5	11. 8	13. 1	23. 6	24. 7	26. 1	27. 4	28. 6	39. 2	40. 6	42. 9	24 26. 14	0. 04	21. 17	20 24 47. 35	15. 48
	B. A. C. 7093	37	5. 4	7. 8	9. 2	19. 8	21. 0	22. 3	23. 7	24. 8	35. 8	37. 1	39. 3	27 22. 38	0. 05	21. 17	20 27 43. 60	15. 65
	B. A. C. 7108	38	9. 5	11. 5	12. 8	23. 5	24. 5	25. 9	27. 3	28. 3	39. 2	40. 4	42. 6	29 25. 95	0. 04	21. 17	20 29 47. 16	15. 47
	B. A. C. 7128	39	29. 2	31. 4	32. 8	43. 3	44. 4	45. 7	46. 9	48. 1	58. 8	59. 9	2. 2	31 45. 70	0. 04	21. 18	20 32 6. 92	15. 33
	Lacaille 8537	40	21. 5	23. 9	25. 3	36. 2	37. 5	38. 8	40. 2	41. 3	52. 5	53. 9	56. 2	34 38. 85	0. 07	21. 18	20 35 0. 10	15. 88
	B. A. C. 7170	41	25. 9	28. 3	29. 7	40. 4	41. 5	42. 9	44. 3	45. 5	56. 3	57. 7	59. 9	36 42. 95	0. 05	21. 18	20 37 4. 18	15. 64
	B. A. C. 7187	42	36. 1	38. 4	39. 6	50. 4	51. 4	52. 8	54. 2	55. 4	6. 1	7. 3	9. 6	38 52. 85	+ 0. 05	21. 18	20 39 14. 08	15. 54
	μ Aquarii	43	43. 8	45. 8	47. 0	56. 6	57. 6	58. 8	0. 0	1. 0	10. 9	12. 1	14. 1	44 58. 88	— 0. 05	21. 18	20 45 20. 01	14. 07
	32 Vulpeculæ	44	9. 5	11. 7	13. 1	24. 0	25. 0	26. 3	27. 6	28. 8	39. 6	41. 0	43. 3	48 26. 35	— 0. 28	21. 19	20 48 47. 26	11. 64
	Lacaille 8660	45	26. 1	28. 2	29. 7	40. 7	41. 8	43. 1	44. 5	45. 6	56. 6	57. 9	0. 2	54 43. 13	+ 0. 06	21. 19	20 55 4. 38	15. 56
	δ Microscopii	46	10. 4	12. 9	14. 5	25. 3	26. 5	27. 7	29. 3	30. 4	41. 7	43. 1	45. 6	57 27. 95	0. 07	21. 19	20 57 49. 21	15. 77
	Lacaille 8701	47	13. 9	16. 3	17. 4	28. 5	29. 6	30. 9	32. 2	33. 4	44. 6	45. 9	48. 2	0 30. 99	0. 06	21. 19	21 0 52. 24	15. 58
	α Canis Majoris	48	31. 2	33. 4	34. 5	44. 5	45. 6	46. 9	48. 3	49. 3	59. 1	0. 3	2. 4	38 46. 86	0. 10	21. 17	6 39 8. 13	9. 49
	α^1 Geminorum	49	48. 6	50. 3	51. 8	53. 3	56. 2	. .	. .	. .	. .	. .	. .	24 52. 04	39. 88	21. 18	7 25 53. 10	13. 90
	α^2 Geminorum	50	14. 5	16. 8	18. 3	29. 7	30. 9	32. 4	33. 8	35. 0	46. 1	47. 6	50. 0	25 32. 28	0. 12	21. 18	7 25 53. 58	13. 85
	α Canis Minoris	51	33. 3	35. 3	36. 5	46. 3	47. 3	48. 4	49. 7	50. 7	0. 2	1. 5	3. 6	31 48. 44	0. 10	21. 18	7 32 9. 72	11. 34
	β Geminorum	52	19. 5	21. 9	23. 2	34. 1	35. 4	36. 6	37. 9	39. 2	50. 0	51. 3	53. 6	36 36. 61	0. 11	21. 18	7 36 57. 90	— 13. 25
18	Sun I	53	15. 0	17. 3	18. 5	28. 4	29. 7	30. 7	31. 8	32. 9	42. 7	43. 9	46. 1	48 30. 64	+ 0. 10	21. 21	9 48 51. 95	. .
	Sun II	†54	. .	. .	. .	. .	. .	. .	11. 7	14. 0	15. 2	16. 6	18. 0	51 15. 10	— 34. 03	+21. 21	9 51 2. 28	. .

54. Through clouds.

August 17. 21h. 15m. Image west 0.11 r. Clamp east.
Image east 0. 03. Clamp west.

August 17, 13h. to 14h. n. = — 0.112 s.
18h. to 21h. — 0. 319.
17–18, ... 0. 000.

Observations of August 17 made with clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 17, 18. 7	+ 21. 11	+ 0. 036	— 0. 098
8. 5	+ 21. 19	+ 0. 012	— 0. 098

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 18	Venus I	1	26. 6	28. 6	29. 8	39. 6	40. 6	41. 8	42. 9	43. 9	53. 6	54. 8	56. 7	17 41. 72	+ 0. 10	+21. 24	12 18 3. 06	+ 1. 21
	Polaris, S. P.	†2	. .	. .	. .	9. 0	27. 0	38. 0	. .	. .	. .	.	. .	10 24. 67	— 48. 03	21. 25	1 9 57. 89	— 115. 60
	α Virginis	3	24. 5	26. 7	27. 7	37. 7	38. 6	39. 8	41. 1	42. 0	51. 6	53. 0	54. 9	17 39. 78	+ 0. 10	21. 25	13 18 1. 13	11. 81
Y.	α² Geminorum	4	. .	. .	. .	45. 6	47. 1	49. 5	7. 1	9. 8	11. 2	12. 6	14. 3	26 2. 15	— 30. 18	21. 60	7 25 53. 57	13. 87
	α Canis Minoris	5	32. 9	34. 9	36. 2	45. 7	46. 9	48. 0	49. 3	50. 2	59. 8	1. 0	2. 9	31 47. 98	+ 0. 11	21. 60	7 32 9. 69	11. 36
	β Geminorum	6	19. 2	21. 4	22. 7	33. 8	34. 8	36. 1	37. 5	38. 7	49. 4	50. 9	53. 1	36 36. 15	0. 15	21. 61	7 36 57. 91	— 13. 27
19	Sun I	7	58. 1	0. 1	1. 2	11. 2	12. 3	13. 6	14. 8	15. 7	25. 4	26. 8	28. 9	52 13. 46	0. 11	21. 64	9 52 35. 21	. .
	Sun II	8	8. 2	10. 3	11. 5	21. 5	22. 6	23. 8	25. 0	26. 0	35. 8	37. 0	39. 2	54 23. 72	0. 11	21. 64	9 54 45. 47	. .
	Venus I	9	19. 7	21. 9	23. 1	32. 7	33. 7	34. 8	36. 0	37. 1	46. 7	48. 0	50. 0	19 34. 88	0. 09	21. 69	12 19 56. 66	+ 1. 23
	Polaris, S. P.	10	12. 0	42. 5	52. 0	13. 0	48. 0	56. 0	38. 0	7. 5	17. 5	30. 5	32. 0	57 59. 00	11 38. 05	21. 70	1 9 58. 75	— 116. 34
	α Virginis	11	24. 0	26. 2	27. 4	37. 2	38. 2	39. 4	40. 6	41. 6	51. 3	52. 7	54. 6	17 39. 38	0. 11	21. 70	13 18 1. 19	11. 80
	Moon I	12	45. 6	47. 8	49. 1	59. 1	0. 4	1. 5	2. 8	3. 8	13. 8	15. 2	17. 3	34 1. 49	0. 09	21. 71	13 34 23. 29	. .
	α Bootis	13	49. 2	51. 3	52. 5	2. 7	3. 8	5. 2	6. 4	7. 5	17. 6	19. 0	21. 0	9 5. 11	0. 13	21. 72	14 9 26. 96	— 10. 27
	δ Ursæ Minoris	†14	47. 5	10. 0	32. 5	53. 0	34. 0	. .	29. 0	8. 0	27. 5	45. 5	12. 0	16 3. 95	+ 1. 86	21. 79	18 16 27. 60	+ 62. 41
		15	49. 5	24. 5	44. 0	27. 0	44. 5	4. 0	24. 5	42. 0	22. 5	44. 0	17. 0					
	51 Cephei, S. P.	16	12. 0	28. 5	6. 0	46. 0	24. 0	59. 5	34. 5	12. 0	57. 0	30. 5	49. 5	34 59. 95	— 2. 29	21. 79	6 35 19. 45	— 100. 97
	σ Sagittarii	†17	12. 0	14. 2	15. 6	26. 5	27. 6	29. 0	30. 2	31. 3	41. 9	43. 2	45. 5	46 28. 82	+ 0. 11	21. 80	18 46 50. 73	15. 78
	Weisse 1276	18	15. 4	17. 5	18. 7	. .	29. 9	31. 0	32. 1	. .	43. 1	44. 4	46. 5	50 30. 96	0. 11	21. 80	18 50 52. 87	14. 53
	B. Z. 299, 167	19	15. 2	17. 3	18. 7	29. 0	30. 2	31. 4	32. 7	33. 6	43. 9	45. 2	47. 3	57 31. 32	+ 0. 11	21. 80	18 57 53. 23	11. 28
	B. Z. 302, 3	20	. .	. .	. .	13. 0	14. 5	16. 5	32. 5	34. 9	36. 2	37. 5	38. 9	58 28. 00	— 27. 40	21. 80	18 58 22. 40	11. 29
	B. A. C. 6554	21	. .	. .	. .	34. 0	35. 5	37. 8	55. 2	57. 7	59. 2	0. 5	2. 0	2 50. 24	— 29. 45	21. 80	19 2 42. 59	16. 20
	* — 29° 28′	22	. .	. .	. .	27. 0	28. 2	29. 5	30. 9	32. 1	. .	. .	. .	5 29. 54	+ 0. 06	21. 80	19 5 51. 40	16. 16
	B. A. C. 6569	23	. .	. .	. .	40. 8	42. 0	43. 4	44. 7	46. 0	. .	. .	. .	5 43. 38	+ 0. 06	21. 80	19 6 5. 24	16. 16
	B. A. C. 6578	24	. .	. .	. .	. .	. .	. .	2. 0	4. 4	5. 8	7. 3	8. 9	8 5. 68	— 36. 74	21. 80	19 7 50. 74	15. 73
	ω Aquilæ	25	49. 8	51. 8	52. 9	2. 7	3. 7	4. 9	6. 2	7. 2	16. 8	18. 3	20. 2	11 4. 95	+ 0. 10	21. 80	19 11 26. 85	12. 23
	B. A. C. 6628	26	23. 4	25. 6	27. 0	37. 9	39. 0	40. 5	41. 7	42. 8	53. 5	55. 1	57. 3	15 40. 35	0. 11	21. 80	19 16 2. 26	15. 99
	δ Aquilæ	27	. .	. .	. .	15. 3	16. 4	17. 5	18. 7	19. 7	. .	. .	. .	18 17. 52	0. 05	21. 80	19 18 39. 37	13. 04
	B. A. C. 6666	28	49. 3	51. 6	52. 8	3. 8	5. 1	6. 4	7. 8	8. 8	19. 5	20. 9	23. 2	21 6. 29	0. 11	21. 81	19 21 28. 21	15. 88
	B. A. C. 6682	29	33. 4	35. 8	37. 1	48. 1	49. 1	50. 6	51. 9	53. 1	3. 7	5. 1	7. 5	23 50. 49	0. 11	21. 81	19 24 12. 41	15. 99
	B. A. C. 6694	30	43. 7	46. 1	47. 3	57. 9	59. 0	0. 4	1. 7	2. 8	13. 1	14. 5	16. 6	26 0. 28	0. 10	21. 81	19 26 22. 19	15. 52
	h² Sagittarii	31	48. 1	50. 4	51. 7	2. 4	3. 5	4. 8	6. 0	7. 2	17. 7	19. 2	21. 4	28 4. 76	0. 11	21. 81	19 28 26. 68	15. 63
	B. A. C. 6716	32	48. 7	50. 9	52. 3	3. 4	4. 4	5. 9	7. 2	8. 3	19. 2	20. 6	22. 9	30 5. 80	0. 11	21. 81	19 30 27. 72	16. 06
	Dorpat 2562, (1st *)	33	12. 1	13. 4	14. 7	15. 9	18. 4	. .	19. 1	21. 3	22. 6	23. 7	25. 1	35 48. 63	0. 35	21. 81	19 36 10. 79	12. 62
	Dorpat 2562, (2d *)	34	35. 5	37. 5	38. 7	48. 4	49. 5	50. 8	51. 8	52. 8	2. 5	3. 6	5. 7	35 50. 62	0. 10	21. 81	19 36 12. 53	12. 62
	O. Arg. N. 19614	35	2. 2	6. 1	8. 4	26. 5	28. 4	30. 9	33. 2	35. 3	53. 2	55. 8	59. 3	41 30. 85	0. 21	21. 81	19 41 52. 87	6. 79
	56 Aquilæ	36	9. 3	11. 4	12. 6	22. 3	23. 5	24. 5	25. 8	26. 8	36. 3	37. 7	39. 7	46 24. 54	0. 10	21. 81	19 46 46. 45	14. 05
	O. Arg. S. 20086	37	. .	. .	. .	29. 0	30. 2	31. 6	32. 8	33. 9	. .	. .	. .	48 31. 50	+ 0. 06	21. 81	19 48 53. 37	15. 62
	O. Arg. S. 20101	38	.	. .	. .	6. 3	7. 8	9. 9	26. 4	29. 0	30. 3	31. 5	33. 0	49 21. 77	— 28. 33	21. 81	19 49 15. 25	15. 62
	c Sagittarii	39	39. 6	41. 6	43. 1	54. 1	55. 2	56. 4	58. 0	59. 2	9. 8	11. 2	13. 6	53 56. 53	+ 0. 11	21. 82	19 54 18. 46	— 15. 90
	λ Ursæ Minoris	40	. .	. .	. .	53. 5	48. 0	53. 0	58. 0	48. 0	. .	. .	. .	0 52. 10	3. 27	21. 82	20 1 17. 19	+ 156. 70
	Dorpat 2643	41	4. 8	6. 8	8. 0	17. 6	18. 8	19. 9	21. 1	22. 1	31. 6	33. 0	34. 9	5 19. 87	0. 10	21. 82	20 5 41. 79	— 13. 62
	B. A. C. 6982	42	59. 0	1. 3	2. 7	13. 3	14. 5	15. 7	17. 1	18. 3	28. 8	30. 3	32. 4	11 15. 76	0. 11	21. 82	20 11 37. 69	15. 56
	B. A. C. 7012	43	48. 5	50. 8	52. 0	2. 9	4. 0	5. 3	6. 7	7. 6	18. 3	19. 7	22. 0	16 5. 25	0. 11	21. 82	20 16 27. 18	15. 61
	ρ Capricorni	44	29. 5	31. 6	32. 7	43. 0	44. 0	45. 2	46. 5	47. 5	57. 5	58. 9	0. 9	20 45. 21	0. 10	21. 82	20 21 7. 13	14. 81
	B. A. C. 7069	45	15. 1	16. 6	18. 1	19. 4	21. 9	. .	26. 9	29. 5	30. 7	31. 9	33. 5	23 54. 36	0. 37	21. 82	20 24 16. 55	15. 21
	B. A. C. 7070	46	40. 5	42. 7	44. 0	54. 4	55. 6	56. 9	58. 2	59. 3	9. 4	10. 8	13. 0	23 56. 80	0. 10	21. 82	20 24 18. 72	15. 21
	B. A. C. 7093	47	. .	. .	. .	19. 2	20. 4	21. 8	23. 0	24. 2	. .	. .	. .	27 21. 72	0. 06	21. 82	20 27 43. 60	15. 65
	Lacaille 8537	48	20. 7	23. 2	24. 6	35. 7	36. 8	38. 1	39. 6	40. 7	51. 6	53. 1	55. 4	34 38. 14	0. 11	21. 82	20 35 0. 07	15. 88
	B. A. C. 7170	49	25. 2	27. 5	28. 8	39. 6	40. 9	42. 1	43. 4	44. 5	55. 3	56. 8	59. 1	36 42. 11	0. 11	21. 83	20 37 4. 05	15. 64
	B. A. C. 7187	50	35. 2	37. 6	38. 8	49. 8	50. 9	52. 1	53. 6	54. 6	5. 4	6. 9	9. 0	38 52. 17	0. 11	21. 83	20 39 14. 11	15. 55
	B. A. C. 7216	51	51. 4	53. 7	54. 9	5. 7	6. 7	8. 1	9. 4	10. 5	21. 0	22. 5	24. 7	42 8. 05	0. 11	21. 83	20 42 29. 99	15. 40
	B. A. C. 7244	52	24. 4	26. 6	27. 9	38. 5	39. 5	40. 8	42. 2	43. 2	53. 8	55. 2	57. 3	45 40. 85	0. 10	21. 83	20 46 2. 78	15. 30
	B. A. C. 7252	53	4. 4	6. 8	8. 1	19. 0	20. 1	21. 5	23. 0	23. 9	34. 6	36. 0	38. 1	48 21. 41	0. 11	21. 83	20 48 43. 35	15. 47
	Lacaille 8647	54	47. 5	49. 9	51. 3	1. 9	3. 2	4. 6	6. 0	7. 2	18. 0	19. 4	21. 6	53 4. 60	0. 11	21. 83	20 53 26. 54	15. 58
	Lacaille 8660	55	25. 5	27. 7	29. 0	39. 9	41. 2	42. 5	43. 9	45. 0	55. 8	57. 3	59. 4	54 42. 47	+ 0. 11	+21. 83	20 55 4. 41	— 15. 56

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 18, . .	. .	. .	+ 0. 100
19, 15. 5	+ 21. 74	+ 0. 017	. .

2. Very unsteady.
14. Steady.
17. Very much blurred.

August 19, 21h. to 55m. Image east $\overset{r.}{0.04}$. Clamp west.

August 18–19, 7h. to 15h. n. = + $\overset{s.}{0.063}$.
19, 18h. to 22h. + 0. 010.

August 19. Stars steady but excessively blurred.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 19	δ Microscopii	1	9.8	12.2	13.4	24.8	26.0	27.3	28.7	29.9	40.8	42.3	44.5	57 27.25	+ 0.11	+21.83	20 57 49.19	— 15.77
	B. A. C. 7340	2	41.3	43.4	44.7	55.3	56.5	57.7	59.0	0.1	10.5	12.0	14.3	0 57.71	0.10	21.83	21 1 19.64	15.14
	3 Piscis Australis	3	35.2	37.6	38.8	49.8	51.0	52.3	53.6	54.8	5.6	6.9	9.2	4 52.25	+ 0.11	21.83	21 5 14.19	15.47
r.	ζ Cygni	4	. .	. .	. .	46.1	47.2	48.5	49.8	50.8	1.9	3.4	5.5	6 54.15	— 5.62	21.84	21 7 10.37	11.68
	Lacaille 8769	5	13.7	16.1	17.3	28.6	29.7	31.0	32.4	33.4	44.4	45.8	48.1	10 30.95	+ 0.11	21.84	21 10 52.90	15.53
	Lacaille 8787	6	6.1	8.5	9.8	21.0	22.2	23.5	24.8	26.0	36.9	38.5	40.6	13 23.45	0.11	21.84	21 13 45.40	15.54
	B. A. C. 7422	7	42.6	45.0	46.2	56.9	58.1	59.4	0.7	1.8	12.5	13.9	16.0	15 59.37	0.11	21.84	21 16 21.32	15.20
	Lacaille 8821	8	55.7	58.0	59.3	10.3	11.5	12.9	14.2	15.3	26.1	27.5	29.8	19 12.78	0.11	21.84	21 19 34.73	15.36
	Lacaille 8834	9	13.7	16.1	17.3	28.1	29.3	30.5	31.7	33.0	43.6	44.9	47.2	22 30.49	0.11	21.84	21 22 52.44	15.16
	B. A. C. 7479	10	5.4	7.6	8.9	19.5	20.7	21.9	23.3	24.4	34.9	36.4	38.5	24 21.95	0.11	21.84	21 24 43.90	15.05
	B. A. C. 7492	11	51.4	53.8	54.9	5.6	6.7	8.1	9.3	10.5	20.8	22.3	24.4	27 7.98	0.10	21.84	21 27 29.92	14.94
	Lacaille 8863	12	43.0	45.1	46.5	57.4	58.4	59.6	1.0	2.1	12.6	14.2	16.3	29 59.65	0.11	21.84	21 29 21.60	15.07
	Lacaille 8890	13	20.6	23.0	24.1	35.0	36.1	37.4	38.8	39.8	50.4	51.7	53.9	33 37.35	0.11	21.84	21 33 59.30	15.01
	Lacaille 8902	14	8.0	10.2	11.5	22.2	23.3	24.7	25.9	27.0	37.6	38.9	41.2	36 24.59	0.11	21.84	21 36 46.54	14.97
	Lacaille 8918	15	11.0	13.5	14.8	25.8	27.0	28.3	29.7	30.8	41.5	43.0	45.3	39 28.25	0.11	21.84	21 39 50.20	15.16
	Lacaille 8937	16	16.6	18.9	20.1	31.1	32.3	33.6	35.0	36.2	47.0	48.5	50.6	42 33.63	0.11	21.85	21 42 55.59	15.14
	μ Capricorni	17	16.3	18.4	19.7	29.6	30.6	31.9	33.0	34.1	43.9	45.0	47.1	45 31.78	+ 0.10	21.85	21 45 53.73	14.26
	α^1 Geminorum	18	. .	. .	. .	. .	. .	. .	6.3	9.0	10.4	11.8	13.5	26 10.20	— 39.05	22.09	7 25 53.24	13.89
	α^2 Geminorum	19	. .	. .	. .	28.8	30.0	31.5	32.9	34.1	45.3	46.7	49.1	25 37.29	— 5.77	22.09	7 25 53.61	13.90
	α Canis Minoris	20	32.6	34.5	35.6	45.6	46.4	47.6	48.9	49.8	59.4	0.6	2.4	31 47.55	+ 0.10	22.09	7 32 9.74	11.38
	β Geminorum	21	18.6	21.0	22.3	33.2	34.4	35.7	37.2	38.3	49.1	50.5	52.7	36 35.73	0.12	22.10	7 36 57.95	— 13.29
20	Mercury I	22	7.8	9.9	11.0	20.6	21.8	23.1	24.3	25.4	34.8	36.2	38.3	59 23.02	0.11	22.16	10 59 45.29	+ 0.18
	Venus I	23	7.9	10.0	11.2	20.9	22.0	23.2	24.5	25.5	34.9	36.2	38.2	20 23.14	0.09	22.18	12 20 45.41	+ 1.25
	Polaris, S. P.	24	13.0	44.0	52.5	14.0	52.5	58.0	42.5	36.0	16.5	31.5	31.5	59 2.91	10 34.36	22.19	1 9 59.46	— 117.13
	α Virginis	25	23.4	25.7	26.9	36.6	37.7	38.8	40.1	41.0	50.8	52.0	54.0	17 38.82	0.09	22.19	13 18 1.10	11.79
	α Bootis	26	48.6	50.7	52.0	2.3	3.3	4.7	5.8	6.9	17.0	18.4	20.5	9 4.56	0.13	22.21	14 9 26.90	— 10.25
	Moon I	27	41.5	43.6	45.2	55.4	56.5	57.8	59.1	0.3	10.3	11.7	13.6	27 57.73	+ 0.08	22.22	14 28 20.03	. .
	δ Ursæ Minoris	28	. .	. .	. .	. .	. .	. .	28.5	6.7	28.2	46.0	11.0	25 24.08	— 9 19.06	22.29	18 16 27.31	+ 62.74
	51 Cephei, S. P.	29	12.2	30.5	6.5	45.7	25.0	59.2	34.2	13.0	57.0	30.5	50.0	35 0.35	— 1.96	22.29	6 35 20.68	— 101.36
	Weisse 1294	30	4.2	6.3	7.5	17.2	18.4	19.6	20.8	21.8	31.3	32.6	34.6	51 19.48	+ 0.10	22.30	18 51 41.88	13.96
	Weisse 1443	31	. .	. .	. .	48.7	49.7	50.9	52.1	53.1	. .	. .	. .	56 50.90	0.05	22.30	18 57 13.25	13.95
	Weisse 1449	32	. .	. .	. .	0.1	1.3	2.6	3.7	4.7	. .	. .	. .	57 2.48	+ 0.05	22.30	18 57 24.83	13.95
	ζ Aquilæ	33	. .	. .	. .	. .	. .	.	18.8	21.0	22.3	23.6	24.9	59 22.12	— 34.02	22.30	18 59 10.40	11.94
	O. Arg. N. 18980	34	44.3	50.2	53.4	20.1	23.2	26.7	30.1	33.0	59.4	2.9	8.5	3 26.53	+ 0.26	22.30	19 3 49.09	1.83
	B. A. C. 6578	35	11.6	14.0	15.2	26.0	27.1	28.4	29.7	30.8	41.4	42.7	44.9	7 28.35	0.11	22.30	19 7 50.76	15.72
	ω Aquilæ	36	49.2	51.2	52.5	2.3	3.4	4.6	5.7	6.7	16.4	17.7	19.8	11 4.50	0.10	22.30	19 11 26.90	12.23
	O. Arg. S. 19685	37	59.8	2.1	3.3	14.4	15.4	16.8	18.2	19.3	29.8	31.3	33.4	24 16.71	0.11	22.31	19 24 39.13	15.89
	O. Arg. S. 19695	38	. .	. .	. .	8.3	9.4	10.7	12.1	13.3	. .	. .	. .	25 10.76	0.06	22.31	19 25 33.13	15.89
	O. Arg. S. 19709	39	21.9	24.4	25.7	36.4	37.5	39.0	40.3	41.4	52.1	53.5	56.0	25 38.93	0.11	22.31	19 26 1.35	15.89
	O. Arg. S. 19713	40	30.2	32.1	33.5	44.5	45.7	46.9	48.3	49.4	0.2	1.5	3.7	25 46.91	0.11	22.31	19 26 9.33	15.89
	κ Aquilæ	41	57.7	59.7	0.9	10.7	11.7	13.0	14.2	15.2	24.7	26.0	27.9	29 12.88	+ 0.10	22.31	19 29 35.29	13.88
	53 Sagittarii	42	. .	. .	. .	. .	.	. .	49.8	52.5	53.8	55.1	56.7	31 53.58	— 36.12	22.31	19 31 39.77	15.47
	B. A. C. 6727	43	. .	. .	. .	. .	. .	. .	7.6	10.2	11.4	12.6	14.3	32 11.22	+ 36.12	22.31	19 31 57.41	15.47
	B. A. C. 6854	44	32.1	34.4	35.8	46.9	48.1	49.4	50.8	51.9	2.7	4.2	6.2	51 49.32	0.12	22.32	19 52 11.76	16.00
	B ·A. C. 6878	45	2.7	5.0	6.3	16.7	17.8	19.1	20.5	21.5	31.8	33.1	35.3	55 19.07	0.11	22.32	19 55 41.50	15.34
	B. A. C. 6899	46	17.2	19.6	20.9	32.0	33.2	34.6	36.0	37.0	48.1	49.6	52.0	58 34.56	0.12	32.32	19 58 57.00	— 16.01
	λ Ursæ Minoris	47	. .	. .	. .	. .	50.0	51.0	59.0	. .	. .	. .	. .	0 53.33	1.94	22.32	20 1 17.59	+ 157.31
	Dorpat 2643	48	4.3	6.4	7.6	17.2	18.3	19.5	20.7	21.7	31.3	32.5	34.4	5 19.45	0.10	22.32	20 5 41.87	— 13.62
	O. Arg. S. 20370	49	21.0	23.3	24.5	35.1	36.3	37.7	39.0	40.2	50 7	52.0	54.1	9 37.63	0.11	22.32	20 10 0.06	15.55
	O. Arg. S. 20393	50	53.8	55.8	57.0	7.9	8.9	10.2	11.6	12.6	23.3	24.5	26.6	11 10.20	0.11	22.32	20 11 32.63	15.51
	B. A. C. 7012	51	47.8	50.1	51.4	2.3	3.5	4.8	6.3	7.3	17.9	19.2	21.4	16 4.73	0.11	22.32	20 16 27.16	15.61
	B. A. C. 7026	52	33.1	35.4	36.7	47.9	49.1	50.5	51.9	53.0	3.7	5.1	7.5	17 50.36	0.12	22.33	20 18 12.81	15.94
	ρ Capricornii	53	28.8	31.0	32.2	42.5	43.5	44.7	45.9	46.9	57.0	58.2	0.4	20 44.65	0.10	22.33	20 21 7.08	14.80
	O. Arg. S. 20578	54	34.8	37.2	38.4	49.1	50.3	51.6	52.9	54.0	4.4	5.9	8.0	23 51.51	+ 0.11	+22.33	20 24 13.95	— 15.48

August 20, 21h. 45m. Image east 0.15 r. Clamp west.
Fine night; stars steady.

August 19–20, 7h. to 15h. n. = + 0.075 s.
18h. to 22h. — 0.006.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 20, 15.6	+ 22.24	+ 0.018	+ 0.100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Aug. 20	B. A. C. 7077 . .	1	. .	. .	. .	22. 4	23. 6	24. 9	26. 0	27. 3	. .	. .	. .	24 24. 84	+ 0. 06	+22. 33	20 24 47. 23	— 15. 48
	B. A. C. 7093 . .	2	4. 2	6. 5	7. 8	18. 7	19. 8	21. 2	22. 4	23. 6	34. 2	35. 6	37. 9	27 21. 08	0. 11	22. 33	20 27 43. 52	15. 65
	B. A. C. 7113 . .	3	23. 7	26. 0	27. 3	37. 9	39. 1	40. 3	41. 5	42. 7	53. 2	54. 5	56. 8	29 40. 27	0. 11	22. 33	20 30 2. 71	15. 38
Y.	B. A. C. 7133 . .	4	40. 9	43. 1	44. 4	55. 0	56. 2	57. 4	58. 7	59. 8	10. 2	11. 6	13. 7	31 57. 36	0. 11	22. 33	20 32 19. 80	15. 36
	B. A. C. 7162 . .	5	52. 6	54. 7	56. 0	6. 5	7. 6	8. 7	10. 2	11. 2	21. 5	22. 9	25. 0	35 8. 81	0. 11	22. 33	20 35 31. 25	15. 19
	♆ Capricorni . . .	6	24. 1	26. 6	27. 8	38. 5	39. 7	41. 0	42. 3	43. 4	54. 0	55. 3	57. 5	37 40. 93	0. 11	22. 33	20 38 3. 37	15. 44
	B. A. C. 7197 . .	7	47. 5	49. 6	50. 9	1. 4	2. 6	3. 9	5. 1	6. 3	16. 7	18. 0	20. 1	40 3. 83	0. 11	22. 33	20 40 26. 27	15. 19
	B. A. C. 7216 . .	8	50. 8	53. 0	54. 3	5. 0	6. 1	7. 5	8. 8	10. 0	20. 5	22. 0	24. 0	42 7. 45	0. 11	22. 33	20 42 29. 89	15. 39
	B. A. C. 7237 . .	9	24. 4	26. 6	28. 0	38. 6	39. 7	41. 0	42. 2	43. 4	53. 7	55. 0	57. 3	44 40. 90	0. 11	22. 33	20 45 3. 34	15. 26
	B. A. C. 7252 . .	10	3. 8	6. 2	7. 5	18. 4	19. 5	21. 0	22. 3	23. 4	33. 9	35. 3	37. 5	48 20. 80	0. 11	22. 33	20 48 43. 24	15. 47
	Lacaille 8647 . .	11	47. 0	49. 3	50. 5	1. 6	2. 8	4. 1	5. 4	6. 6	17. 3	18. 8	21. 1	53 4. 05	0. 12	22. 34	20 53 26. 51	15. 59
	B. A. C. 7300 . .	12	40. 4	42. 5	44. 0	54. 6	56. 0	57. 2	58. 5	59. 7	10. 2	11. 6	13. 8	54 57. 14	0. 11	22. 34	20 55 19. 59	15. 32
	2 Piscis Australis .	13	26. 1	28. 5	29. 9	41. 4	42. 5	44. 0	45. 5	46. 6	57. 9	59. 4	1. 8	57 43. 96	0. 12	22. 34	20 58 6. 42	16. 00
	Lacaille 8697 . .	14	0. 8	3. 4	4. 9	17. 3	18. 6	20. 1	21. 7	22. 9	35. 0	36. 5	39. 2	0 20. 04	0. 13	22. 34	21 0 42. 51	16. 62
	Lacaille 8722 . .	15	38. 5	41. 2	42. 5	54. 6	55. 8	57. 3	58. 9	0. 1	11. 9	13. 3	15. 8	3 57. 26	0. 13	22. 34	21 4 19. 73	16. 31
	Lacaille 8742 . .	16	38. 2	40. 7	42. 1	54. 2	55. 4	57. 0	58. 4	59. 7	11. 6	13. 2	15. 6	6 56. 92	0. 13	22. 34	21 7 19. 39	16. 32
	Lacaille 8760 . .	17	. .	. .	. .	53. 0	54. 4	56. 1	57. 6	58. 8	. .	. .	. .	8 55. 98	0. 07	22. 34	21 9 18. 39	16. 61
	θ^1 Microscopii . . .	18	21. 5	24. 4	26. 0	38. 8	40. 3	41. 8	43. 5	44. 8	57. 4	59. 0	1. 7	11 41. 75	0. 14	22. 34	21 12 4. 23	16. 83
	Lacaille 8791 . .	19	23. 6	26. 3	27. 8	40. 1	41. 3	42. 8	44. 4	45. 9	57. 8	59. 4	1. 9	14 42. 85	0. 13	22. 34	21 15 5. 32	16. 41
	B. A. C. 7432 . .	20	11. 7	14. 5	15. 9	28. 3	29. 5	31. 1	32. 6	33. 8	45. 8	47. 5	50. 1	17 30. 98	0. 13	22. 34	21 17 53. 45	16. 38
	Lacaille 8827 . .	21	43. 3	46. 1	47. 4	59. 8	1. 1	2. 7	4. 3	5. 4	17. 5	19. 2	21. 6	21 2. 58	0. 13	22. 34	21 21 25. 05	16. 32
	β Aquarii	22	47. 4	49. 5	50. 6	0. 4	1. 5	2. 6	4. 0	4. 9	14. 2	15. 6	17. 6	24 2. 57	0. 10	22. 34	21 24 25. 01	13. 81
	β Cephei	23	51. 3	57. 2	0. 8	28. 6	31. 7	35. 2	38. 9	41. 8	9. 4	13. 4	18. 8	26 35. 19	0. 27	22. 35	21 26 57. 81	7. 52
	Lacaille 8862 . .	24	. .	. .	. .	59. 8	1. 0	2. 4	3. 8	5. 0	. .	. .	. .	30 2. 40	0. 07	22. 35	21 30 24. 82	15. 41
	Lacaille 8892 . .	25	36. 2	38. 6	39. 8	50. 8	51. 9	53. 2	54. 4	55. 5	6. 1	7. 4	9. 8	33 53. 06	0. 11	22. 35	21 34 15. 52	15. 07
	ε Pegasi	26	53. 8	55. 9	57. 2	6. 8	8. 0	9. 2	10. 4	11. 4	20. 9	22. 3	24. 3	37 9. 11	0. 10	22. 35	21 37 31. 56	13. 02
	α Canis Minoris . .	27	31. 6	33. 7	34. 9	44. 6	45. 6	46. 8	48. 0	49. 0	58. 6	59. 8	1. 8	31 46. 76	0. 13	22. 80	7 32 9. 69	11. 40
	β Geminorum . . .	28	18. 0	20. 3	21. 6	32. 6	33. 7	35. 2	36. 5	37. 7	48. 4	49. 8	52. 0	36 35. 07	0. 19	22. 80	7 36 58. 06	— 13. 31
21	Sun I	†29	21. 8	24. 0	25. 3	35. 0	36. 0	37. 4	38. 5	39. 5	49. 3	50. 5	52. 6	59 37. 26	0. 14	22. 86	10 0 0. 26	. .
	Sun II	†30	31. 9	33. 9	35. 3	45. 0	46. 0	47. 4	48. 6	49. 5	59. 5	0. 5	2. 5	1 47. 28	0. 14	22. 86	10 2 10. 28	. .
	Mercury I . . .	†31	9. 1	11. 2	12. 4	. .	. .	. .	. .	. .	36. 2	37. 4	39. 4	5 24. 28	+ 0. 17	22. 89	11 5 47. 34	+ 0. 18
	Venus I . . .	32	. .	. .	. .	17. 8	19. 0	20. 9	36. 1	38. 3	39. 6	40. 8	42. 3	23 31. 85	— 25. 79	22. 92	12 23 28. 98	+ 1. 27
	Polaris, S. P. . .	33	. .	. .	. .	14. 0	32. 5	44. 5	55. 0	15. 5	.	. .	. .	9 44. 30	— 6. 95	22. 94	1 10 0. 29	— 117. 93
	α Virginis	34	22. 8	24. 8	26. 0	35. 9	37. 0	38. 2	39. 3	40. 3	50. 0	51. 2	53. 3	17 38. 07	+ 0. 10	22. 94	13 18 1. 11	11. 78
	α Bootis	35	47 8	49. 9	51. 2	1. 4	2. 5	3. 8	5. 0	6. 2	16. 1	17. 6	19. 7	9 3. 75	0. 16	22. 97	14 9 26. 88	10. 24
	α Libræ	36	42. 4	44. 6	45. 8	55. 8	56. 9	58. 1	59. 4	0. 4	10. 2	11. 6	13. 6	42 58. 07	0. 10	22. 98	14 43 21. 15	— 12. 83
	β Ursæ Minoris . .	37	45. 7	53. 5	57. 8	34. 7	38. 7	42. 9	47. 6	51. 4	27. 5	32. 1	39. 6	50 42. 86	0. 82	22. 99	14 51 6. 67	+ 2. 83
	Moon I	38	56. 4	58. 8	0. 0	10. 5	11. 7	13. 1	14. 4	15. 4	25. 8	27. 1	29. 3	25 12. 96	0. 09	23. 00	15 25 36. 05	. .
	δ Scorpii	39	. .	. .	. .	52. 4	53. 5	54. 8	56. 1	57. 2	. .	. .	. .	52 54. 80	0. 04	23. 01	15 53 17. 85	— 14. 13
	β Scorpii	40	52. 9	54. 2	56. 3	6. 6	7. 6	8. 9	10. 2	11. 2	21. 4	22. 6	24. 8	57 8. 79	0. 09	23. 02	15 57 31. 90	13. 92
	α Canis Minoris . .	41	31. 0	33. 1	34. 2	44. 0	45. 0	46. 1	47. 2	48. 3	58. 0	59. 2	1. 1	31 46. 11	0. 13	23. 53	7 32 9. 77	11. 42
	β Geminorum . . .	42	17. 1	19. 6	20. 8	31. 8	32. 9	34. 5	35. 8	36. 9	47. 8	49. 1	51. 3	36 34. 33	0. 18	23. 53	7 36 58. 04	— 13. 34
22	Sun I	43	3. 0	5. 2	6. 5	16. 0	17. 2	18. 5	19. 8	20. 9	30. 6	31. 9	33. 7	3 18. 48	0. 14	23. 61	10 3 42. 23	. .
	Sun II	44	12. 8	14. 9	16. 1	26. 1	27. 3	28. 4	29. 6	30. 7	40. 0	41. 4	43. 5	5 28. 26	0. 14	23. 61	10 5 52. 01	. .
	Mercury I . . .	45	3. 8	6. 0	7. 1	16. 9	17. 9	19. 0	20. 3	21. 4	30. 8	32. 0	34. 0	11 19. 02	0. 13	23. 62	11 11 42. 77	+ 0. 18
	Venus I	46	28. 7	30. 8	32. 0	41. 8	42. 7	43. 8	45. 0	46. 2	55. 8	57. 0	59. 0	24 43. 89	+ 0. 11	23. 64	12 25 7. 64	+ 1. 30
	Polaris, S. P. . .	†47	. .	. .	. .	. .	32. 0	44. 0	55. 0	. .	. .	. .	. .	9 43. 67	— 6. 27	23. 66	13 10 1. 06	— 118. 71
	α Virginis	48	22. 0	24. 1	25. 2	35. 1	36. 2	37. 4	38. 5	39. 6	49. 4	50. 6	52. 5	17 37. 33	+ 0. 10	23. 66	13 18 1. 09	11. 77
	δ Scorpii	49	. .	. .	. .	51. 5	52. 6	53. 9	55. 2	56. 3	6. 5	7. 8	10. 0	53 59. 22	— 5. 25	23. 72	15 54 17. 69	14. 12
	β Scorpii	50	52. 3	54. 4	55. 6	5. 8	6. 9	8. 2	9. 4	10. 5	20. 5	21. 9	24. 0	57 8. 14	+ 0. 13	23. 73	15 57 32. 00	13. 90
	α Scorpii	51	23. 9	26. 3	27. 6	38. 3	39. 5	40. 7	42. 0	43. 1	53. 7	55. 1	57. 4	20 40. 69	0. 13	23. 74	16 21 4. 56	14. 82
	Moon I	52	27. 4	29. 6	30. 9	41. 6	42. 8	44. 0	45. 4	46. 4	57. 0	58. 5	0. 6	25 44. 02	0. 13	23. 74	16 26 7. 89	. .
	ζ Ophiuchi . . .	53	1. 3	3. 4	4. 6	14. 4	15. 5	16. 7	17. 9	19. 0	28. 6	29. 9	31. 9	28 16. 65	0. 12	23. 74	16 28 40. 51	13. 33
	24 Scorpii	54	3. 0	5. 3	6. 6	16. 6	17. 7	18. 9	20. 2	21. 3	31. 2	32. 5	34. 6	33 18. 90	+ 0. 13	+23. 74	16 33 42. 77	— 14. 04

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 21, 12. 7	+ 22. 93	+ 0. 026	+ 0. 120
22, 14. 4	+ 23. 69	+ 0. 023	+ 0. 120

29-30. Badly defined.
31. Faint.
47. Very faint.

August 22, 19h. 30m. Image east 0. 21 r. Clamp west.

			s.
August 21,	. . .	n. =	+ 0. 100.
21-22,	7h. to 14h.		+ 0. 092.
	15h. to 20h.		0. 000.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	IX.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 22	A Ophiuchi (1st *)	1	55.1	56.5	58.0	59.4	2.0	. .	9.0	11.6	13.0	14.1	15.8	6 35.45	+ 0.41	+23.75	17 6 59.61	+ 15.26
	A Ophiuchi (2d *)	2	19.2	21.4	22.6	33.5	34.7	36.0	37.3	38.4	41.9	50.4	52.5	6 35.92	0.13	23.75	17 6 59.80	15.26
	O. Arg. S. 16531	3	. .	. .	. .	25.8	27.0	28.3	29.7	30.8	. .	. .	. .	7 28.32	0.08	23.75	17 7 52.15	15.26
Y.	O. Arg. S. 16623	4	23.6	26.0	27.3	38.2	39.3	40.5	41.9	43.0	53.6	55.0	57.3	11 40.52	0.13	23.75	17 12 4.40	15.30
	Weisse 254	5	46.2	48.3	49.4	59.0	0.2	1.4	2.5	3.6	13.0	14.4	16.3	15 1.29	0.12	23.76	17 15 25.17	13.24
	b Ophiuchi	6	24.0	26.3	27.5	38.0	39.3	40.5	41.9	43.0	53.4	54.8	56.9	17 40.51	0.13	23.76	17 18 4.40	15.07
	B. A. C. 5946	7	57.5	59.0	1.2	12.1	13.3	14.4	15.9	17.1	27.8	29.3	31.4	29 14.45	0.14	23.76	17 29 38.35	15.62
	o Serpentis	8	7.4	9.6	10.8	20.8	21.8	23.0	24.2	25.3	34.9	36.3	38.3	33 22.95	0.12	23.76	17 33 46.83	13.98
	B. A. C. 5989	9	. .	. .	. .	34.3	35.5	36.8	38.1	39.3	. .	. .	. .	35 36.80	0.08	23.76	17 36 0.64	15.14
	* — 23 °38′	10	44.3	46.6	47.9	58.3	59.3	0.8	2.0	3.2	13.4	15.1	17.0	38 0.72	+ 0.13	23.76	17 38 24.61	15.16
	9 Sagittarii	11	. .	. .	. .	6.3	7.5	8.8	10.1	11.4	21.6	22.9	25.0	55 14.20	— 5.34	23.77	17 55 32.63	15.33
	B. A. C. 6132	12	49.5	51.7	52.9	3.8	4.9	6.2	7.4	8.6	19.0	20.6	22.7	0 6.12	+ 0.13	23.77	18 0 30.02	15.49
	δ Ursæ Minoris	13	47.0	23.0	42.0	23.5	42.0	2.5	23.5	38.5	20.0	42.0	15.0	16 0.17	+ 2.03	23.78	18 16 25.98	+ 63.48
	51 Cephei, S. P.	14	11.0	30.0	4.5	44.5	23.0	58.0	34.0	12.0	55.0	28.0	49.7	34 59.06	— 2.49	23.78	6 35 20.35	— 102.25
	O. Arg. N. 18839	15	55.7	1.9	5.5	35.3	38.6	42.4	46.4	49.3	18.4	22.2	28.4	55 42.19	+ 0.37	23.79	18 56 6.35	0.24
	δ Aquilæ	†16	0.4	2.4	3.5	13.3	. .	15.5	16.8	17.8	27.2	28.5	30.4	18 15.58	0.01	23.80	19 18 39.39	13.01
23	κ Ophiuchi	17	34.4	36.4	37.6	47.5	48.5	49.7	50.9	51.9	1.5	2.8	4.7	50 49.63	0.12	24.45	16 51 14.20	11.58
	A Ophiuchi (1st *)	18	54.3	55.7	57.2	58.6	1.3	. .	8.2	10.8	12.2	13.5	15.0	6 34.68	0.41	24.46	17 6 59.55	15.25
	A Ophiuchi (2d *)	19	18.4	20.7	21.9	32.7	33.9	35.2	36.5	37.6	48.2	49.6	51.7	6 35.13	0.13	24.46	17 6 59.72	15.25
	O. Arg. S. 16531	20	. .	. .	. .	25.1	26.3	27.6	28.9	30.1	. .	. .	. .	7 27.60	0.08	24.46	17 7 52.14	15.25
	O. Arg. S. 16623	21	23.1	25.3	26.6	37.5	38.6	40.0	41.2	42.4	52.9	54.3	56.5	11 39.86	0.13	24.46	17 12 4.45	15.29
	b Ophiuchi	22	23.4	25.6	26.7	37.5	38.6	39.9	41.1	42.2	52.7	54.0	56.1	17 39.80	0.13	24.46	17 18 4.39	15.05
	B. A. C. 5896	23	. .	. .	. .	48.6	49.8	51.1	52.5	53.5	. .	. .	. .	19 51.10	0.08	24.46	17 20 15.64	15.23
	B. A. C. 5909	24	36.9	39.2	40.5	51.2	52.4	53.7	55.0	56.1	6.6	8.0	10.2	22 53.62	0.13	24.46	17 23 18.21	15.34
	B. A. C. 5924	25	7.1	9.7	10.9	22.3	23.6	24.9	26.3	27.5	38.7	40.2	42.4	25 24.87	0.14	24.47	17 25 49.48	16.07
	Moon I	26	31.5	33.8	35.0	45.8	46.9	48.3	49.7	50.8	1.3	2.6	4.9	28 48.24	0.13	24.47	17 29 12.84	. .
	58 Ophiuchi	27	36.6	38.7	40.0	50.4	51.5	52.8	54.2	55.2	5.4	6.7	8.8	34 52.75	0.13	24.47	17 35 17.35	14.89
	μ Herculis	28	27.2	29.6	30.8	41.7	43.1	44.4	45.7	46.8	57.5	58.9	1.2	40 44.26	0.14	24.47	17 41 8.87	9.96
	B. A. C. 6041	29	38.6	40.7	42.0	52.2	53.4	54.5	55.8	56.9	6.9	8.3	10.3	43 54.51	0.13	24.47	17 44 19.11	14.67
	53 Ophiuchi	30	51.1	53.4	54.7	5.4	6.5	7.8	9.2	10.3	20.8	22.1	24.2	46 7.77	0.13	24.47	17 46 32.37	15.33
	4 Sagittarii	31	48.9	51.2	52.4	3.0	4.1	5.4	6.7	7.7	18.1	19.6	21.6	51 5.34	0.13	24.48	17 51 29.95	15.23
	O. Arg. S. 17510	32	. .	. .	. .	52.1	53.5	54.7	56.0	57.2	. .	. .	. .	53 54.70	0.08	24.48	17 54 19.26	15.30
	7 Sagittarii	33	. .	. .	. .	4.7	5.8	7.1	8.4	9.5	. .	. .	. .	54 7.10	0.08	24.48	17 54 31.66	15.31
	9 Sagittari	34	51.6	53.9	55.0	. .	. .	. .	. .	. .	20.9	22.3	24.4	55 8.02	0.17	24.48	17 55 32.67	15.32
	O. Arg. S. 17540	35	. .	. .	. .	10.3	11.4	12.7	13.9	15.0	. .	. .	. .	55 12.66	0.08	24.48	17 55 37.22	15.32
	O. Arg. S. 17553	36	. .	. .	. .	39.1	40.2	41.4	42.8	43.8	. .	. .	. .	55 41.46	+ 0.08	24.48	17 56 6.02	15.32
	γ² Sagittarii	37	. .	. .	. .	37.8	38.9	40.3	41.7	42.8	53.9	55.3	57.7	56 46.05	— 5.64	24.48	17 57 4.89	16.06
	B. A. C. 6132	38	48.8	51.1	52.3	3.1	4.2	5.4	6.9	8.0	18.4	19.8	22.0	0 5.45	+ 0.13	24.48	18 0 30.06	15.47
	* — 17° 10′	39	. .	. .	. .	24.9	26.0	27.1	28.4	29.4	. .	. .	. .	2 27.16	0.08	24.48	18 2 51.72	14.55
	μ Sagittarii	40	57.7	59.8	1.0	11.5	12.7	14.0	15.2	16.2	26.5	27.7	29.9	5 13.84	0.13	24.48	18 5 38.45	— 14.99
	δ Ursæ Minoris	41	. .	. .	. .	22.7	40.5	0.3	21.2	38.0	. .	. .	. .	16 0.54	1.23	24.49	18 16 26.26	+ 63.88
	α² Geminorum	42	10.8	13.2	14.6	26.1	27.3	28.6	30.0	31.3	. .	. .	. .	25 22.74	6.00	25.01	7 25 53.75	— 14.00
	α Canis Minoris	43	. .	31.6	32.7	42.4	43.5	44.7	45.9	46.9	56.5	57.7	. .	31 44.66	0.13	25.01	7 32 9.80	11.46
	β Geminorum	44	15.8	18.2	19.5	30.5	31.7	32.9	34.3	35.5	46.3	47.7	49.9	36 32.94	0.14	25.02	7 36 58.10	— 13.38
24	Sun I	45	24.0	25.9	27.1	37.0	38.0	39.2	40.3	41.3	51.1	52.5	54.5	10 39.17	0.14	25.09	10 11 4.40	. .
	Sun II	46	33.5	35.5	36.8	46.6	47.7	48.9	50.2	51.1	0.8	2.1	4.1	12 48.85	0.14	25.09	10 13 14.08	. .
	Mercury I	47	34.4	36.4	37.6	47.3	48.4	49.6	50.9	51.9	1.3	2.7	4.6	22 49.55	0.14	25.13	11 23 14.82	+ 0.18
	Venus I	48	27.9	30.0	31.2	41.0	42.0	43.2	44.4	45.4	55.0	56.3	58.3	27 43.15	0.14	25.16	12 28 8.45	+ 1.34
	Polaris, S. P.	†49	. .	. .	. .	. .	. .	41.0	52.0	. .	49.5	56.0	. .	5 19.54	+ 4 17.78	25.18	1 10 2.50	— 120.19
	α Virginis	†50	. .	. .	. .	. .	. .	. .	6.0	8.3	9.5	10.8	12.2	18 9.36	— 33.57	25.18	13 18 0.97	11.74
	μ Sagittarii	51	56.8	59.1	0.2	10.5	11.8	12.9	14.3	15.4	25.5	26.8	28.9	5 12.93	+ 0.17	25.32	18 5 38.42	14.97
	B. A. C. 6187	52	42.2	44.5	45.8	56.7	58.0	59.3	0.6	1.7	12.3	13.8	16.0	7 59.17	0.19	25.32	18 8 24.68	15.78
	B. A. C. 6214	53	3.9	6.1	7.4	18.2	19.4	20.7	22.0	23.1	33.6	35.2	37.3	12 20.63	0.19	25.32	18 12 46.14	— 15.60
	δ Ursæ Minoris	54	. .	. .	. .	22.0	40.0	0.0	20.5	36.5	. .	. .	. .	15 59.80	+ 0.35	+25.33	18 16 25.48	+ 64.29

16. Cloudy.
49. Cloudy.
50. Cloudy.

August 23. . . n. = + 0.000 s.
23–24. 7h. to 14h. — 0.021.
18h. to 22h. — 0.070.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 23, 17.6	+ 24.47	+ 0.026	+ 0.120

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 24	B. A. C. 6273	1	17.2	19.4	20.7	31.3	32.5	33.9	35.1	36.3	46.7	48.1	50.4	20 33.78	+ 0.19	+25.33	18 20 59.30	− 15.53
	* — 33° 5′	2	. .	. .	. .	49.4	50.7	52.0	53.4	54.7	. .	. .	. .	23 52.04	0.15	25.33	18 24 17.52	16.54
Y.	B. A. C. 6305	3	19.5	22.0	23.4	34.9	36.2	37.6	39.0	40.2	51.5	53.0	55.2	24 37.50	+ 0.21	25.33	18 25 3.04	16.55
	B. A. C. 6308	4	. .	. .	. .	. .	. .	. .	20.7	23.4	24.9	26.2	28.1	25 24.66	− 39.35	25.33	18 25 10.64	16.55
	1 Aquilæ	5	. .	. .	. .	. .	. .	. .	53.7	56.0	57.3	58.5	59.8	27 57.06	− 33.37	25.33	18 27 49.02	13.75
	B. A. C. 6346	6	5.8	8.0	9.1	19.7	20.9	22.2	23.5	24.5	34.8	36.3	38.4	30 22.11	+ 0.18	25.34	18 30 47.63	15.32
	Moon I	7	49.3	51.4	52.6	3.4	4.5	5.7	7.0	8.1	18.7	20.0	22.3	33 5.73	0.17	25.34	18 33 31.24	. .
	B. A. C. 6377	8	25.5	27.9	29.3	40.3	41.5	42.9	44.4	45.5	56.4	57.9	0.1	37 42.88	+ 0.20	25.34	18 38 8.42	16.12
	O. Arg. S., 18672	9	. .	. .	. .	35.8	37.2	39.3	55.3	57.7	59.0	0.2	1.6	39 50.76	− 24.23	25.34	18 39 48.87	15.02
	29 Sagittarii	10	55.0	57.3	58.5	8.7	9.9	11.1	12.4	13.4	23.6	24.9	27.0	41 11.07	+ 0.17	25.34	18 41 36.58	15.03
	ν^1 Sagittarii	11	. .	. .	. .	30.4	31.5	32.7	34.0	35.1	45.5	46.9	49.0	45 38.14	− 5.23	25.34	18 45 58.25	15.31
	ν^2 Sagittarii	12	12.7	14.9	16.2	26.6	27.8	29.1	30.3	31.5	41.6	43.0	45.1	46 28.98	+ 0.18	25.34	18 46 54.50	15.31
	B. A. C. 6474	13	45.7	48.0	49.4	0.4	1.5	2.8	4.1	5.3	16.2	17.6	19.8	51 2.80	0.19	25.34	18 51 28.33	15.95
	B. A. C. 6490	14	26.8	29.0	30.4	40.9	42.2	43.3	44.8	45.9	56.3	57.6	59.8	53 43.36	0.19	25.35	18 54 8.90	15.57
	B. A. C. 6505	15	43.2	45.6	46.9	57.4	58.7	0.0	1.3	2.4	13.0	14.4	16.6	55 59.95	0.19	25.35	18 56 25.49	15.62
	ζ Aquilæ	16	29.5	31.6	32.8	42.7	43.8	. .	46.2	47.3	57.1	58.4	0.4	58 44.98	0.13	25.35	18 59 10.46	11.90
	π Sagittarii	17	59.6	1.9	3.1	13.4	14.6	15.9	17.1	18.1	28.3	29.7	31.8	1 15.77	0.17	25.35	19 1 41.29	15.15
	B. A. C. 6562	18	9.5	11.9	13.1	23.9	25.0	26.4	27.7	28.8	39.3	40.6	42.9	4 26.28	0.19	25.35	19 4 51.82	15.71
	ψ Sagittarii	19	30.6	32.8	34.2	44.9	46.0	47.3	48.6	49.6	0.2	1.6	3.7	6 47.23	0.19	25.35	19 7 12.77	15.63
	ω Aquilæ	20	45.9	48.1	49.2	59.1	0.2	1.4	2.6	3.6	13.3	14.6	16.6	11 1.33	0.13	25.35	19 11 26.81	12.19
	ρ^1 Sagittarii	21	. .	8.7	10.0	20.2	21.3	22.4	23.6	24.7	34.7	36.1	. .	13 22.41	0.16	25.35	19 13 47.92	14.84
	O. Arg. S. 19516	22	46.4	48.6	50.0	0.9	2.0	3.2	4.3	5.4	16.2	17.4	19.6	17 3.09	0.19	25.36	19 17 28.64	15.71
	O. Arg. S. 19551	23	20.9	23.1	24.5	35.3	36.4	37.7	39.1	40.2	50.7	52.0	54.5	18 37.67	0.19	25.36	19 19 3.22	15.71
	O. Arg. S. 19588	24	47.1	49.3	50.6	1.4	2.6	3.8	5.2	6.3	16.9	18.2	20.4	20 3.80	0.19	25.36	19 20 29.35	15.71
	B. A. C. 6682	25	29.9	32.1	33.3	44.4	45.5	47.0	48.4	49.4	0.2	1.5	3.8	23 46.86	0.19	25.36	19 24 12.41	15.96
	B. A. C. 6738	26	. .	. .	. .	40.2	41.4	42.6	43.9	45.1	. .	. .	. .	33 42.64	0.14	25.36	19 34 8.14	15.59
	ω Sagittarii	27	48.9	51.2	52.5	3.3	4.5	5.7	7.1	8.2	18.8	20.3	22.4	47 5.72	+ 0.19	25.37	19 47 31.28	15.73
	O. Arg. S. 20090	28	. .	. .	. .	46.3	47.9	50.0	6.7	9.3	10.5	12.0	13.6	49 2.04	− 28.52	25.37	19 48 58.89	15.72
	A Sagittarii	29	58.4	0.6	. .	12.7	14.0	15.3	16.5	17.7	. .	29.8	31.9	50 15.21	+ 0.17	25.37	19 50 40.75	15.72
	B. A. C. 6864	30	. .	. .	. .	6.9	8.3	10.4	26.6	29.1	30.4	31.6	33.2	53 22.06	− 27.74	25.37	19 53 19.69	15.34
	B. A. C. 6878	31	59.7	1.8	3.0	13.5	14.7	15.9	. .	18.4	28.7	30.0	32.1	55 15.78	+ 0.32	25.37	19 55 41.47	− 15.32
	λ Ursæ Minoris	32	. .	. .	. .	51.0	45.0	45.0	51.0	43.5	. .	. .	. .	0 47.10	+ 1.08	25.38	20 1 13.56	+ 160.43
	B. A. C. 6948	33	. .	. .	. .	. .	. .	. .	33.2	36.0	37.4	38.7	40.5	7 37.16	− 38.25	25.38	20 7 24.29	− 16.08
	B. A. C. 6982	34	55.5	57.8	58.9	9.7	10.9	12.2	13.5	14.6	25.2	26.5	28.6	11 12.13	+ 0.19	25.38	20 11 37.70	15.54
	B. A. C. 7081	35	53.1	55.3	56.7	7.1	8.3	9.6	10.9	12.0	22.1	23.7	25.8	25 9.51	+ 0.18	25.39	20 25 35.08	15.19
	B. A. C. 7093	36	. .	. .	. .	31.1	32.5	34.6	51.5	54.0	55.5	56.8	58.4	27 46.80	− 28.69	25.39	20 27 43.50	15.64
	B. A. C. 7113	37	. .	. .	. .	50.0	51.4	53.5	10.1	12.5	13.8	15.0	16.6	30 5.36	− 28.08	25.39	20 30 2.67	15.37
	B. A. C. 7133	38	37.7	39.9	41.2	51.8	53.0	54.2	55.6	56.6	7.2	8.4	10.6	31 54.20	+ 0.18	25.39	20 32 19.77	15.35
	B. A. C. 7162	39	49.4	51.5	52.7	3.2	4.4	5.8	7.0	8.1	18.4	19.8	22.0	35 5.66	0.18	25.39	20 35 31.23	15.18
	B. A. C. 7197	40	44.4	46.6	47.7	58.4	59.5	0.7	2.0	3.2	13.5	14.8	17.2	40 0.73	0.18	25.40	20 40 26.31	15.19
	B. A. C. 7216	41	47.6	50.0	51.2	2.0	3.1	4.4	5.7	6.9	17.4	18.8	20.9	42 4.36	0.19	25.40	20 42 29.95	15.38
	μ Aquarii	42	39.3	41.3	42.5	52.3	53.2	54.5	55.7	56.8	6.4	7.8	9.7	44 54.50	0.15	25.40	20 45 20.05	14.07
	Lacaille 8619	43	. .	. .	. .	1.8	3.0	4.4	5.7	6.9	. .	. .	. .	47 4.36	+ 0.15	25.40	20 47 29.91	16.01
	* — 32° 1′	44	. .	. .	. .	23.0	24.5	26.8	44.5	47.0	48.4	49.7	51.6	47 39.44	− 30.07	25.40	20 47 34.77	16.01
	1 Piscis Australis	45	14.1	16.6	17.9	29.6	30.8	32.2	33.5	34.7	56.0	57.5	59.8	52 32.06	+ 0.21	25.40	20 52 57.67	16.04
	B. A. C. 7300	46	37.3	39.6	40.8	51.5	52.7	54.0	55.3	56.5	7.0	8.3	10.5	54 53.95	0.19	25.40	20 55 19.54	15.32
	2 Piscis Australis	47	22.8	25.3	26.7	38.2	39.5	40.9	42.2	43.5	54.8	56.4	58.7	57 40.82	0.21	25.41	20 58 6.44	16.04
	Lacaille 8707	48	13.7	16.0	17.4	28.5	29.7	31.1	32.5	33.6	44.6	46.1	48.5	1 31.06	0.20	25.41	21 1 56.67	15.70
	3 Piscis Australis	49	31.5	33.8	35.3	46.2	47.4	48.7	49.9	51.2	1.9	3.2	5.6	4 48.61	+ 0.19	25.41	21 5 14.21	15.48
	ζ Cygni	50	. .	. .	. .	42.2	43.4	45.0	46.4	47.4	58.4	59.8	1.9	6 50.56	− 5.62	25.41	24 7 10.35	11.67
	4 Piscis Australis	51	58.6	1.0	2.5	13.9	15.2	16.5	18.0	19.2	30.3	32.1	34.3	9 16.51	+ 0.21	25.41	21 9 42.13	15.88
	Lacaille 8776	52	9.6	12.1	13.4	24.3	25.5	26.9	28.2	29.3	40.1	41.3	43.7	11 26.76	0.19	25.41	21 11 52.36	15.39
	Lacaille 8790	53	53.6	56.0	57.3	8.4	9.7	11.1	12.4	13.6	24.5	26.0	28.3	14 10.99	+ 0.20	25.41	21 14 36.60	15.57
	B. A. C. 7419	54	. .	. .	. .	. .	. .	. .	10.4	12.9	14.1	15.4	16.9	16 13.94	− 36.64	25.41	21 16 2.71	15.79
	B. A. C. 7434	55	13.4	15.7	17.0	27.6	28.8	30.1	31.5	32.6	43.1	44.5	46.5	17 30.07	+ 0.19	+25.41	21 17 55.67	− 15.19

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 24, 16.3	+ 25.27	+ 0.029	+ 0.138

r.
August 24, 21h. 40m. Image east 0.24. Clamp west.
Image west 0.08. Clamp east.

Fine night; stars very steady.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 24	Lacaille 8821	1	. .	. .	. .	. .	. .	. .	43.1	45.5	46.9	48.3	50.0	19 46.76	— 37.46	+25.42	21 19 34.72	— 15.37
	β Aquarii	2	44.4	46.4	47.5	57.2	58.3	59.5	0.7	1.6	11.1	12.4	14.4	23 59.41	+ 0.14	25.42	21 24 24.97	13.82
	β Cephei	3	48.5	45.3	57.7	25.8	29.0	32.5	35.8	38.9	6.5	10.2	16.0	26 32.29	+ 0.21	25.42	21 26 57.92	7.46
Y.	ξ Aquarii	4	. .	. .	. .	17.9	19.3	21.2	36.3	38.7	39.9	41.0	42.5	30 32.10	— 25.81	25.42	21 30 31.71	— 13.96
26	λ Ursæ Minoris	†5	. .	. .	. .	. .	. .	. .	27.0	32.0	37.0	47.0	52.0	30 27.00	29 44.18	27.72	20 1 10.54	+ 162.26
	α² Capricorni	†6	48.4	50.4	51.8	1.5	2.6	3.8	5.0	6.0	16.0	17.2	19.3	10 3.82	0.09	27.70	20 10 31.43	— 14.38
	B. A. C. 7012	7	. .	. .	. .	. .	. .	. .	33.2	35.8	37.2	38.6	40.1	16 36.98	37.55	27.71	20 16 27.14	15.58
	ρ Capricorni	8	23.7	25.8	27.1	37.0	38.1	39.3	40.6	41.7	51.9	53.0	55.3	20 39.41	0.05	27.71	20 21 7.07	14.78
	Moon I	9	12.1	14.4	15.6	25.8	26.8	28.0	29.3	30.2	40.6	41.8	44.1	39 28.06	0.07	27.72	20 39 55.71	. .
	μ Aquarii	10	37.3	39.3	40.4	50.1	51.1	52.4	53.6	54.5	4.4	5.5	7.7	44 52.39	0.08	27.72	20 45 20.03	14.07
	32 Vulpeculæ	11	2.8	5.1	6.5	17.3	18.5	19.7	21.0	22.3	33.0	34.4	36.6	48 19.75	0.25	27.73	20 48 47.23	11.61
	B. A. C. 7287	12	57.2	59.5	0.9	11.6	12.7	14.0	15.3	16.5	27.5	28.7	30.2	53 14.01	0.02	27.73	20 53 41.72	15.49
	A Capricorni	13	26.9	29.2	30.6	41.1	42.2	43.4	44.7	45.8	56.6	58.0	0.3	58 43.53	0.03	27.73	20 59 11.23	15.29
	ν Aquarii	14	29.5	31.3	32.5	42.0	43.1	44.3	45.6	46.7	56.4	57.7	59.8	0 44.44	0.08	27.74	20 1 12.10	14.22
	ζ Cygni	†15	25.6	27.6	29.5	. .	. .	. .	. .	. .	56.4	57.8	0.0	6 42.82	0.22	27.74	21 7 10.34	— 11.67
27	Sun I	16	. .	. .	. .	. .	. .	. .	. .	. .	48.5	49.8	51.8	21 50.03	13.66	28.21	10 22 4.58	. .
	Sun II	17	30.5	32.4	33.6	43.4	44.6	45.7	46.9	47.9	57.9	58.9	1.0	23 45.71	0.13	28.21	10 24 13.79	. .
	Venus I	†18	25.0	26.1	27.2	28.3	29.5	. .	58.1	0.3	1.6	2.9	4.3	31 44.33	— 17.13	28.31	12 31 55.51	+ 1.41
	Polaris, S. P.	†19	. .	. .	. .	3.0	19.0	28.0	42.0	2.0	. .	. .	. .	9 30.80	+ 4.98	28.35	1 10 4.13	— 121.89
	α Virginis	†20	. .	. .	. .	30.4	31.5	32.6	33.8	35.0	44.8	46.0	47.9	17 37.75	— 5.15	28.35	13 18 0.95	11.71
	α Bootis	†21	42.7	44.7	46.3	56.2	57.3	58.6	59.8	0.9	11.3	12.4	14.5	8 58.61	0.15	28.39	14 9 26.85	— 10.15
	δ Ursæ Minoris	22	. .	. .	. .	. .	. .	. .	. .	11.5	34.5	. .	18.0	25 41.35	— 9 46.02	28.59	18 16 23.90	+ 65.48
	51 Cephei, S. P.	23	59.5	18.0	51.0	36.5	15.5	49.0	26.0	2.5	44.0	18.5	37.5	34 48.91	+ 7.11	28.61	6 34 24.63	— 104.70
	ζ Aquilæ	†24	26.5	28.4	29.9	39.5	40.5	41.7	42.8	44.0	54.1	55.3	57.4	58 41.83	— 0.18	28.63	18 59 10.28	11.86
	B. A. C. 6568	25	13.4	15.8	17.1	28.1	29.3	30.6	32.0	33.2	44.4	45.7	48.0	5 30.69	— 0.02	28.64	7 5 59.31	16.16
	B. A. C. 2320, S. P.	26	. .	. .	. .	46.0	39.0	32.0	24.0	21.0	. .	. .	. .	13 32.40	+ 17.32	28.63	19 14 18.35	246.97
	O. Arg. S. 19685	27	53.9	56.0	57.4	8.1	9.3	10.6	12.0	13.3	24.0	25.2	27.4	24 10.65	— 0.02	28.64	19 24 39.27	15.83
	O. Arg. S. 19695	28	. .	. .	. .	2.3	3.3	4.5	6.0	7.1	. .	. .	. .	25 4.64	+ 0.03	28.64	19 25 33.31	15.83
	O. Arg. S. 19709	29	16.0	18.1	19.6	. .	. .	. .	. .	. .	46.3	47.4	49.6	25 32.83	— 0.06	28.64	19 26 1.41	15.83
	O. Arg. S. 19713	30	. .	. .	. .	38.3	39.3	40.6	41.9	43.1	. .	. .	. .	25 40.64	+ 0.03	28.64	19 26 9.31	15.83
	B. A. C. 6716	31	. .	. .	. .	. .	. .	. .	33.5	36.4	37.9	39.4	40.9	30 37.62	— 38.46	28.65	19 30 27.81	16.00
	Dorpat 2562 (1st *)	32	5.8	7.3	8.5	9.8	11.9	.	12.4	15.0	16.4	17.7	19.0	35 42.38	0.40	28.65	19 36 10.63	12.56
	Dorpat 2562 (2d *)	33	28.9	30.7	32.1	41.6	42.6	43.9	45.0	46.1	55.8	57.0	58.9	35 43.87	0.15	28.65	19 36 12.37	12.56
	γ Aquilæ	†34	4.7	6.9	8.2	17.7	18.8	. .	21.2	22.2	32.1	33.3	35.3	39 20.04	0.15	28.65	19 39 48.54	12.40
	B. A. C. 6792	35	2.4	4.7	6.3	16.8	18.0	19.3	20.7	21.9	33.0	34.3	36.5	42 19.44	0.02	28.66	19 42 48.08	15.85
	B. A. C. 6854	36	26.0	28.3	29.8	40.5	41.6	43.0	44.4	45.6	56.7	58.1	0.4	51 43.13	0.01	28.66	19 52 11.78	15.95
	B. A. C. 6888	37	9.4	11.7	13.1	23.8	25.0	26.3	27.6	28.8	39.6	41.0	43.1	56 26.31	0.02	28.67	19 56 54.96	— 15.74
	λ Ursæ Minoris	†38	. .	. .	. .	2.0	57.0	59.0	5.0	58.0	. .	. .	. .	1 0.02	15.47	28.67	20 1 13.22	+ 163.06
	α² Capricorni	39	47.6	49.5	50.8	0.5	1.5	2.8	3.9	4.9	14.9	16.1	18.2	10 2.79	0.07	28.68	20 10 31.40	— 14.37
	B. A. C. 7021	40	. .	. .	. .	21.4	22.9	24.9	42.0	44.7	46.2	47.8	49.1	17 37.38	29.23	28.69	20 17 36.84	15.65
	ρ Capricorni	41	22.6	24.8	26.0	36.1	37.2	38.5	39.6	40.6	50.9	52.2	54.4	20 38.45	0.05	28.69	20 21 7.09	14.78
	B. A. C. 7069	42	9.1	10.5	11.7	13.1	15.6	. .	20.6	23.4	24.6	26.0	27.5	23 48.21	0.31	28.69	20 24 16.59	15.19
	B. A. C. 7070	43	34.1	36.2	37.5	47.7	48.9	50.0	51.5	52.5	2.8	4.2	6.5	23 50.17	0.04	28.69	20 24 18.82	15.19
	B. A. C. 7113	44	17.6	19.7	21.2	31.7	32.7	34.0	35.3	36.5	47.1	48.4	50.6	29 34.07	0.03	28.70	20 30 2.74	15.36
	B. A. C. 7133	45	34.8	36.9	38.4	48.7	49.8	51.1	52.5	53.6	4.3	5.4	7.8	31 51.21	0.03	28.70	20 32 19.88	15.34
	B. A. C. 7162	46	46.4	48.6	50.0	0.2	1.3	2.7	4.0	5.1	15.6	16.8	19.0	35 2.70	0.04	28.70	20 35 31.36	15.17
	ε Aquarii	47	25.9	38.0	39.1	48.8	49.8	51.0	52.1	53.3	3.1	4.4	6.3	39 51.07	0.08	28.70	20 40 19.69	14.11
	μ Aquarii	48	36.3	38.4	39.6	49.2	50.2	51.5	52.7	53.7	3.4	4.4	6.6	44 51.45	0.08	28.71	20 45 20.08	14.07
	ν Aquarii	49	. .	. .	. .	. .	. .	. .	14.2	16.8	17.9	19.3	20.6	2 17.76	— 34.48	28.72	21 2 12.00	14.21
	B. A. C. 7366	50	. .	. .	. .	17.0	18.1	19.4	20.9	22.1	.	. .	. .	6 19.50	+ 0.03	28.72	21 6 48.25	15.31
	4 Piscis Australis	51	55.7	58.3	59.6	10.9	11.9	13.4	14.8	16.1	27.5	28.8	31.4	9 13.49	0.00	28.73	21 9 42.22	15.88
	Lacaille 8777	52	. .	. .	. .	23.4	24.5	25.8	27.2	28.4	. .	. .	. .	11 25.86	+ 0.03	28.73	21 11 54.62	15.31
	ι Capricorni	53	57.0	59.1	0.4	10.4	11.6	12.7	13.9	15.0	25.1	26.4	28.5	14 12.74	— 0.06	28.73	21 14 41.41	14.56
	B. A. C. 7442	54	32.4	34.6	36.0	46.4	47.6	48.8	50.2	51.3	2.1	3.3	5.5	17 48.93	— 0.03	+28.74	21 18 17.64	— 15.11

5. Unsteady.
6. Blurred; C worst.
15. Very unsteady.
18. Very unsteady.

19–20–21. Unsteady.
24. Unsteady.
34. Very unsteady.
38. Very unsteady.

August 26, 21h. 15m. Image west 0.12 r. Clamp east.
Stars very unsteady.

August 27, 22h. 30m. Image west 0.24 r. Clamp east.
Image west 0.05. Clamp west.

August 26. . . . . . n. = — 0.223 s.
27. (day) . . . — 0.051.
27. 18h. to 23h. — 0.223.
August 26–27. Observations made with the clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 26, 20.6	+ 27.72	+ 0.040	— 0.120
27, 19.1	+ 28.63	+ 0.048	— 0.120

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed. R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 27	O. Arg. S. 21382 .	1	. .	. .	. .	13. 4	14. 7	16. 9	33. 8	36. 6	37. 8	39. 2	40. 6	18 29. 12	— 28. 76	+28. 74	21 18 29. 10	— 15. 11
	Moon I	2	27. 4	29. 3	30. 7	40. 5	41. 6	42. 9	44. 1	45. 2	55. 1	56. 3	58. 6	39 42. 88	0. 09	28. 75	21 40 11. 54	. .
	μ Capricorni . . .	3	9. 8	11. 8	12. 9	22. 9	23. 9	25. 2	26. 4	27. 4	37. 4	38. 6	40. 6	45 25. 17	0. 07	28. 76	21 45 53. 86	14. 22
Y.	Lacaille 8968 . .	4	. .	. .	. .	. .	. .	. .	22. 1	25. 1	26. 5	27. 8	29. 4	49 26. 18	39. 84	28. 76	21 49 17. 10	15. 02
	B. A. C. 7652 . .	5	54. 6	56. 9	58. 2	8. 7	9. 8	11. 0	12. 3	13. 3	24. 0	25. 2	27. 5	51 11. 05	0. 03	28. 76	21 51 39. 78	14. 74
	Lacaille 9003 . .	6	11. 0	13. 3	14. 5	25. 4	26. 6	28. 0	29. 3	30. 4	41. 4	42. 7	45. 0	54 27. 96	0. 02	28. 76	21 54 56. 70	15. 01
	B. A. C. 7715 . .	7	. .	. .	. .	. .	. .	. .	21. 6	24. 4	25. 7	27. 2	28. 5	2 25. 48	38. 48	28. 77	22 2 15. 77	15. 00
	Lacaille 9058 . .	†8	. .	. .	. .	47. 4	48. 4	49. 6	51. 0	52. 2	3. 0	4. 2	6. 6	4 55. 30	— 5. 58	28. 77	22 5 18. 49	14. 83
	θ Aquarii	9	56. 7	58. 6	59. 8	. .	. .	. .	. .	. .	. .	. .	. .	8 58. 37	+ 13. 27	28. 78	22 9 40. 42	13. 87
	β Geminorum . .	10	11. 9	14. 3	15. 5	26. 5	27. 8	29. 0	30. 4	31. 5	42. 2	43. 7	45. 9	36 28. 97	0. 17	29. 10	7 36 58. 24	13. 48
28	Sun I	11	59. 3	1. 3	2. 5	12. 4	13. 5	14. 5	15. 8	16. 8	26. 5	27. 6	29. 9	25 14. 55	0. 12	29. 21	10 25 43. 88	. .
	Sun II . . .	12	8. 4	10. 4	11. 6	21. 5	22. 6	23. 7	24. 8	25. 9	35. 6	36. 8	39. 0	27 23. 66	0. 12	29. 21	10 27 52. 99	. .
	α Virginis	†13	16. 4	18. 4	19. 8	29. 5	30. 6	31. 8	32. 8	33. 9	. .	. .	. .	17 26. 65	4. 96	29. 32	13 18 0. 93	— 11. 70
	λ Ursæ Minoris . .	†14	25. 5	10. 0	14. 5	39. 0	32. 0	36. 5	43. 0	32. 0	45. 0	53. 0	37. 0	0 33. 41	+ 5. 23	29. 56	20 1 8. 20	+ 164. 01
	Polaris, S. P. . .	15	. .	. .	. .	12. 0	28. 0	43. 0	53. 0	12. 0	. .	. .	. .	9 41. 60	— 6. 11	29. 31	1 10 4. 80	— 122. 39
	O Arg. S. 20575 .	16	. .	. .	. .	32. 8	33. 8	35. 2	36. 6	37. 8	. .	. .	. .	23 35. 24	+ 0. 06	29. 57	20 24 4. 87	15. 83
	B. A. C. 7071 . .	17	. .	. .	. .	53. 2	54. 5	55. 8	57. 2	58. 3	. .	. .	. .	23 55. 80	0. 06	29. 57	20 24 25. 43	15. 83
	ε Delphini . . .	18	59. 0	1. 1	2. 4	12. 2	13. 3	14. 4	15. 6	16. 6	26. 3	27. 6	29. 6	26 14. 37	0. 10	29. 57	20 26 44. 04	12. 59
	B. A. C. 7113 . .	19	16. 5	18. 8	20. 0	30. 8	31. 8	33. 1	34. 5	35. 5	45. 9	47. 3	49. 4	29 33. 05	0. 11	29. 58	20 30 2. 74	15. 36
	B. A. C. 7133 . .	20	33. 5	35. 7	37. 1	47. 7	48. 7	50. 2	51. 5	52. 5	3. 0	4. 5	6. 5	31 50. 08	0. 11	29. 58	20 32 19. 77	15. 34
	B. A. C. 7168 . .	21	35. 8	38. 2	39. 5	50. 5	51. 7	53. 0	54. 3	55. 5	6. 4	7. 7	10. 0	35 52. 96	0. 11	29. 58	20 36 22. 65	15. 72
	* — 27° 23′ . . .	22	33. 1	35. 4	36. 7	47. 6	48. 8	50. 0	51. 4	52. 5	3. 2	4. 7	6. 8	37 50. 02	0. 11	29. 58	20 38 19. 71	15. 59
	B. A. C. 7181 . .	23	9. 0	10. 5	12. 0	13. 4	16. 0	. .	23. 8	26. 3	27. 7	29. 0	30. 6	37 49. 83	0. 39	29. 58	20 38 19. 80	15. 59
	B. A. C. 7210 . .	24	10. 3	12. 5	14. 0	25. 0	26. 0	27. 4	28. 8	29. 9	40. 5	42. 0	44. 2	41 27. 33	0. 11	29. 59	20 41 57. 03	15. 61
	* — 27° 53′ . . .	25	47. 3	48. 9	50. 3	51. 7	54. 4	. .	2. 5	5. 0	6. 3	7. 6	9. 4	41 28. 34	+ 0. 39	29. 59	20 41 58. 32	15. 61
	ω Capricorni . . .	26	. .	. .	. .	. .	. .	. .	47. 0	49. 6	50. 9	52. 3	53. 9	43 50. 74	— 37. 24	29. 59	20 43 43. 09	15. 55
	B. A. C. 7244 . .	27	. .	. .	. .	45. 9	47. 3	49. 5	5. 8	8. 5	9. 9	11. 0	12. 7	46 1. 32	— 28. 18	29. 59	20 46 2. 73	15. 30
	* — 24° 46′ . . .	28	34. 6	36. 8	38. 0	48. 7	50. 0	51. 1	52. 5	53. 5	4. 1	5. 4	7. 6	46 51. 12	+ 0. 11	29. 59	20 47 20. 82	15. 28
	Lacaille 8633 . .	29	32. 9	35. 7	37. 3	49. 6	50. 9	52. 5	54. 0	55. 4	7. 6	9. 3	11. 9	51 52. 46	0. 13	29. 59	20 52 22. 18	16. 80
	B. A. C. 7292 . .	30	28. 0	30. 7	32. 1	44. 6	46. 0	47. 5	49. 0	50. 4	2. 5	4. 1	6. 8	53 47. 43	+ 0. 13	29. 60	20 54 17. 16	16. 78
	A Capricorni . . .	31	. .	. .	. .	. .	. .	. .	14. 6	17. 2	18. 6	19. 8	21. 5	59 18. 34	— 36. 64	29. 60	20 59 11. 30	15. 28
	Lacaille 8707 . .	32	9. 6	11. 9	13. 4	24. 5	25. 6	27. 1	28. 5	29. 7	40. 4	42. 1	44. 4	1 27. 02	+ 0. 12	29. 60	21 1 56. 74	15. 70
	ζ Cygni	33	23. 5	25. 7	27. 1	38. 2	39. 4	40. 7	42. 1	43. 1	54. 2	55. 7	57. 9	6 40. 69	0. 11	29. 60	21 7 10. 40	11. 66
	4 Piscis Australis .	34	54. 5	56. 9	58. 3	9. 9	11. 0	12. 6	14. 0	15. 1	26. 3	27. 9	30. 2	9 12. 43	0. 12	29. 61	21 9 42. 16	15. 87
	Lacaille 8777 . .	35	8. 0	10. 3	11. 7	22. 5	23. 6	25. 0	26. 3	27. 5	38. 1	39. 6	41. 7	11 24. 94	0. 11	29. 61	21 11 54. 66	15. 33
	Lacaille 8790 . .	36	49. 5	51. 9	53. 4	4. 6	5. 8	7. 1	8. 5	9. 6	20. 6	21. 9	24. 3	14 7. 02	0. 12	29. 61	21 14 36. 75	15. 57
	B. A. C. 7426 . .	37	43. 4	45. 8	47. 1	57. 8	58. 9	0. 3	1. 7	2. 7	13. 0	14. 5	16. 7	16 0. 17	0. 11	29. 61	21 16 29. 89	15. 62
	B. A. C. 7442 . .	38	31. 2	33. 5	34. 8	45. 5	46. 6	47. 9	49. 2	50. 3	0. 8	2. 2	4. 5	17 47. 86	0. 11	29. 61	21 18 17. 58	15. 11
	5 Piscis Australis .	39	9. 5	11. 9	13. 3	24. 6	25. 9	27. 4	28. 7	29. 8	40. 9	42. 5	44. 9	20 27. 22	0. 12	29. 61	21 20 56. 95	15. 68
	Lacaille 8834 . .	40	5. 8	8. 1	9. 5	20. 3	21. 5	22. 9	24. 3	25. 4	35. 7	37. 1	39. 4	22 22. 73	0. 11	29. 62	21 22 52. 46	15. 18
	B. A. C. 7479 . .	41	57. 6	59. 8	1. 2	11. 9	13. 1	14. 3	15. 6	16. 8	27. 2	28. 4	30. 8	24 14. 25	0. 11	29. 62	21 24 43. 98	15. 07
	B. A. C. 7492 . .	42	43. 8	46. 1	47. 4	58. 0	59. 1	0. 4	1. 7	2. 8	13. 2	14. 5	16. 7	27 0. 34	0. 11	29. 62	21 27 30. 07	14. 97
	Lacaille 8870 . .	43	26. 5	28. 7	30. 1	41. 2	42. 2	43. 6	45. 0	46. 0	56. 6	58. 1	0. 5	30 43. 50	0. 11	29. 62	21 31 13. 23	15. 24
	Lacaille 8890 . .	44	12. 9	15. 2	16. 4	27. 2	28. 3	29. 7	31. 0	32. 1	42. 6	44. 0	46. 2	33 29. 60	0. 11	29. 63	21 33 59. 34	15. 04
	Lacaille 8902 . .	45	0. 3	2. 5	3. 7	14. 4	15. 6	16. 8	18. 2	19. 4	29. 8	31. 3	33. 4	36 16. 85	0. 11	29. 63	21 36 46. 59	15. 01
	Lacaille 8918 . .	46	3. 4	5. 7	7. 0	18. 2	19. 3	20. 6	22. 0	23. 2	33. 9	35. 2	37. 5	39 20. 55	0. 11	29. 63	21 39 50. 29	15. 19
	Lacaille 8937 . .	47	8. 8	11. 2	12. 5	23. 5	24. 6	26. 0	27. 4	28. 5	39. 3	40. 7	43. 0	42 25. 95	0. 11	29. 63	21 42 55. 69	15. 18
	μ Capricorni . . .	48	8. 5	10. 8	12. 0	22. 0	22. 9	24. 2	25. 4	26. 4	36. 2	37. 5	39. 5	45 24. 13	0. 10	29. 63	21 45 53. 86	14. 30
	Lacaille 8968 . .	49	30. 5	32. 8	34. 2	45. 0	46. 2	47. 5	48. 9	50. 0	0. 6	2. 2	4. 3	48 47. 47	0. 11	29. 64	21 49 17. 22	15. 01
	11 Piscis Australis .	50	1. 0	3. 4	4. 7	15. 7	16. 9	18. 2	19. 5	20. 5	31. 4	32. 8	35. 1	51 18. 11	0. 11	29. 64	21 51 47. 86	15. 07
	Lacaille 9003 . .	51	9. 9	12. 3	13. 6	24. 3	25. 6	27. 0	28. 4	29. 6	40. 2	41. 5	43. 7	54 26. 92	0. 11	29. 64	21 54 56. 67	15. 02
	Lacaille 9012 . .	52	. .	. .	. .	20. 7	21. 9	23. 1	24. 5	25. 6	. .	. .	. .	56 23. 16	0. 06	29. 64	21 56 52. 86	15. 07
	Lacaille 9027 . .	53	13. 6	16. 0	17. 2	27. 8	29. 0	30. 4	31. 7	32. 6	43. 2	44. 5	46. 7	59 30. 25	0. 11	29. 64	22 0 0. 00	14. 77
	B. A. C. 7715 . .	54	28. 8	31. 2	32. 5	43. 5	44. 7	46. 1	47. 5	48. 5	59. 5	0. 8	3. 1	1 46. 02	0. 11	29. 65	22 2 15. 78	15. 00
	λ Piscis Australis .	55	50. 2	52. 6	53. 9	5. 0	6. 1	7. 4	8. 6	9. 8	20. 7	22. 0	24. 3	6 7. 33	+ 0. 11	+29. 65	22 6 37. 09	— 14. 92

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 28, 23. 0	+ 29. 69	+ 0. 045	+ 0. 100

8. Cloudy.
13. Battery feeble.
14. Very steady.

August 27–28, 7h. to 14h. n. = + 0.$\overset{s.}{}$100.
28, 20h. to 2h. 0. 000.

August 28, 1h. 45m. Image east 0.$\overset{r.}{}$14. Clamp west.

Fine night; stars very steady.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
.28	θ Aquarii	1	55. 5	57. 6	58. 9	8. 5	9. 6	10. 7	12. 0	13. 0	22. 6	23. 9	25. 8	9 10. 74	+ 0. 10	+29. 65	22 9 40. 49	— 13. 87
	γ Aquarii	2	54. 3	56. 4	57. 5	7. 2	8. 3	9. 4	10. 5	11. 5	21. 0	22. 2	24. 2	14 9. 32	0. 10	29. 66	22 14 39. 08	13. 58
	Lacaille 9131 . .	3	46. 4	48. 7	50. 1	1. 0	2. 2	3. 5	4. 9	6. 2	16. 9	18. 3	20. 6	18 3. 53	0. 11	29. 66	22 18 33. 30	14. 80
.	* — 29° 26′ . .	4	. .	. .	. .	14. 9	16. 2	17. 4	18. 8	20. 0	. .	. .	. .	21 17. 46	0. 06	29. 66	22 21 47. 18	14. 80
	Lacaille 9144 . .	5	1. 6	4. 0	5. 4	. .	. .	. .	. .	. .	32. 4	33. 9	36. 1	21 18. 90	+ 0. 16	29. 66	22 21 48. 72	14. 80
	β Piscis Australis .	6	. .	. .	. .	31. 4	32. 9	35. 3	53. 1	55. 9	57. 2	58. 5	0. 3	23 48. 08	— 30. 50	29. 66	22 23 47. 24	15. 01
	Lacaille 9180 . .	7	. .	. .	. .	. .	. .	. .	11. 6	14. 1	15. 5	16. 7	18. 1	28 15. 20	36. 38	29. 67	22 28 8. 49	14. 47
	κ Aquarii	8	. .	. .	. .	. .	. .	. .	44. 1	46. 5	47. 7	48. 7	50. 1	30 47. 42	— 33. 18	29. 67	22 30 43. 91	13. 65
	Lacaille 9209 . .	9	. .	. .	. .	21. 3	22. 5	23. 7	25. 1	26. 2	. .	. .	. .	33 23. 76	+ 0. 06	29. 67	22 33 53. 49	14. 47
	Lacaille 9221 . .	10	53. 4	55. 6	56. 9	7. 3	8. 5	9. 8	10. 9	12. 1	22. 3	23. 8	25. 7	35 9. 66	0. 11	29. 67	22 35 39. 44	14. 29
	Moon II	†11	51. 6	53. 8	55. 0	4. 9	6. 0	7. 1	8. 4	9. 4	19. 2	20. 5	22. 5	40 7. 13	0. 10	29. 68	22 40 36. 91	. .
	λ Aquarii	12	47. 2	49. 4	50. 6	0. 2	1. 4	2. 5	3. 8	4. 8	14. 3	15. 6	17. 6	45 2. 49	0. 10	29. 68	22 45 32. 27	13. 71
	Lacaille 9307 . .	13	3. 2	5. 7	7. 2	18. 5	19. 9	21. 3	22. 7	23. 8	35. 0	36. 5	38. 8	48 21. 15	0. 12	29. 68	22 48 50. 95	14. 58
	B. A. C. 8002 . .	14	23. 2	25. 4	26. 8	38. 1	39. 1	40. 5	41. 9	42. 9	54. 0	55. 5	57. 7	51 40. 46	0. 12	29. 68	22 52 10. 26	14. 44
	Lacaille 9338 . .	15	29. 8	32. 1	33. 4	43. 9	45. 1	46. 3	47. 7	48. 7	58. 9	0. 3	2. 4	53 46. 24	0. 11	29. 69	22 54 16. 04	14. 13
	Lacaille 9356 . .	16	31. 6	33. 9	35. 3	46. 4	47. 8	49. 2	50. 6	51. 8	2. 9	4. 4	6. 6	55 49. 14	0. 12	29. 69	22 56 18. 95	14. 42
	φ Aquarii	17	32. 9	34. 9	36. 1	45. 9	46. 9	48. 1	49. 4	50. 3	59. 8	1. 2	3. 1	6 48. 05	0. 10	29. 70	23 7 17. 85	13. 59
	96 Aquarii	18	37. 1	39. 1	40. 2	49. 9	51. 0	52. 2	53. 4	54. 4	3. 9	5. 1	7. 1	11 52. 13	0. 10	29. 70	23 12 21. 93	13. 55
	Lacaille 9528 . .	19	3. 0	5. 4	6. 8	18. 1	19. 3	20. 8	22. 1	23. 3	34. 4	35. 9	38. 2	28 20. 66	0. 12	29. 71	23 28 50. 49	13. 92
	ι Piscium	20	13. 7	15. 7	16. 9	26. 5	27. 6	28. 8	29. 9	30. 9	40. 5	41. 7	43. 7	32 28. 72	0. 12	29. 71	23 32 58. 53	13. 51
	Lacaille 9568 . .	21	8. 8	11. 2	12. 7	23. 8	25. 0	26. 4	27. 7	28. 8	39. 8	41. 2	43. 5	35 26. 26	+ 0. 11	29. 72	23 35 56. 09	13. 77
	Lacaille 9579 . .	22	. .	. .	. .	8. 3	9. 8	12. 2	28. 8	31. 4	32. 7	33. 9	35. 5	37 24. 08	— 28. 71	29. 72	23 37 25. 09	13. 70
	δ Sculptoris . . .	23	4. 3	6. 6	8. 0	19. 0	20. 2	21. 5	22. 8	24. 0	35. 0	36. 3	38. 5	41 21. 47	+ 0. 11	29. 72	23 41 51. 30	13. 69
	Lacaille 9619 . .	24	36. 9	39. 4	40. 7	52. 4	53. 5	54. 9	56. 4	57. 5	8. 9	10. 3	12. 8	43 54. 88	0. 12	29. 72	23 44 24. 72	13. 70
	Lacaille 9636 . .	25	55. 3	57. 5	58. 9	10. 2	11. 2	12. 6	14. 0	15. 1	26. 1	27. 6	29. 9	46 12. 58	0. 12	29. 73	23 46 42. 43	13. 61
	Lacaille 9652 . .	26	21. 5	23. 7	25. 0	35. 6	36. 6	37. 9	39. 2	40. 3	50. 5	52. 0	54. 1	48 37. 85	0. 11	29. 73	23 49 7. 69	13. 49
	* — 30° 16′ . .	27	. .	. .	. .	9. 5	10. 8	12. 1	13. 5	14. 7	. .	. .	. .	51 12. 12	0. 07	29. 73	23 51 41. 92	13. 52
	B. A. C. 8332 . .	28	42. 1	44. 4	45. 7	56. 8	58. 1	59. 6	0. 8	2. 0	13. 0	14. 3	16. 6	51 59. 40	0. 12	29. 73	23 52 29. 25	13. 52
	ζ Sculptoris . . .	29	35. 0	37. 6	38. 7	50. 1	51. 2	52. 6	54. 0	55. 1	6. 2	7. 5	9. 8	54 52. 53	0. 12	29. 73	23 55 22. 38	13. 46
	* — 33° 14′ . .	30	. .	. .	. .	23. 0	24. 3	25. 7	27. 1	28. 3	. .	. .	. .	57 25. 68	0. 06	29. 73	23 57 55. 47	13. 46
	Lacaille 9714 . .	31	1. 5	3. 0	4. 6	6. 0	9. 1	. .	20. 7	23. 5	24. 8	26. 2	27. 9	57 44. 73	+ 0. 42	29. 73	23 58 14. 88	13. 46
	Lacaille 9735 . .	32	37. 0	38. 3	39. 6	41. 1	42. 3	. .	15. 7	18. 6	20. 0	21. 4	23. 1	0 59. 71	— 19. 98	29. 74	0 1 9. 47	13. 41
	Weisse 90 . . .	33	23. 2	25. 2	26. 3	36. 1	37. 1	38. 3	39. 4	40. 4	49. 9	51. 2	53. 2	5 38. 21	+ 0. 10	29. 74	0 6 8. 05	13. 37
	B. A. C. 42 . . .	34	14. 6	16. 7	17. 9	27. 5	28. 6	29. 8	30. 9	32. 0	41. 5	42. 8	44. 7	8 29. 73	0. 10	29. 74	0 8 59. 57	13. 37
	Lacaille 37 . . .	35	3. 6	6. 1	7. 3	18. 6	19. 8	21. 3	22. 7	23. 7	34. 7	36. 3	38. 4	11 21. 14	0. 12	29. 74	0 11 51. 00	13. 20
	Lacaille 49 . . .	36	18. 9	21. 4	22. 7	34. 0	35. 1	36. 4	37. 8	38. 9	50. 0	51. 5	53. 8	13 36. 41	0. 12	29. 75	0 14 6. 28	13. 16
	B. A. C. 77 . . .	37	37. 3	39. 8	41. 1	52. 4	53. 7	55. 1	56. 5	57. 7	8. 8	10. 4	12. 8	15 55. 05	0. 12	29. 75	0 16 24. 92	13. 12
	Lacaille 78 . . .	38	29. 1	31. 6	32. 9	44. 2	45. 3	46. 8	48. 2	49. 4	0. 4	2. 0	4. 2	17 46. 74	0. 12	29. 75	0 18 16. 61	13. 18
	Lacaille 92 . . .	39	56. 5	59. 1	0. 3	11. 7	13. 0	14. 5	15. 8	17. 0	28. 4	29. 8	32. 2	20 14. 39	0. 12	29. 75	0 20 44. 26	13. 04
	12 Ceti	40	22. 0	24. 0	25. 1	35. 0	36. 0	37. 1	38. 3	39. 2	48. 8	50. 1	52. 1	22 37. 06	0. 10	29. 75	0 23 6. 91	13. 23
	Lacaille 131 . .	41	35. 9	38. 4	39. 6	51. 4	52. 5	53. 9	55. 5	56. 6	8. 0	9. 3	11. 7	26 53. 89	0. 12	29. 76	0 27 23. 77	12. 91
	Lacaille 142 . .	42	35. 4	37. 6	38. 8	49. 4	50. 5	51. 9	53. 2	54. 2	4. 5	5. 9	8. 0	28 51. 76	0. 11	29. 76	0 29 21. 63	12. 97
	Lacaille 157 . .	43	18. 0	20. 2	21. 5	32. 3	33. 3	34. 7	36. 0	37. 1	47. 7	49. 0	51. 2	31 34. 64	0. 11	29. 76	0 32 4. 51	12. 91
	Lacaille 181 . .	44	14. 5	17. 2	18. 6	30. 7	32. 0	33. 5	35. 2	36. 2	48. 0	49. 5	52. 1	35 33. 41	0. 13	29. 76	0 36 3. 30	12. 70
	Lacaille 194 . .	45	20. 9	23. 3	24. 6	36. 2	37. 3	38. 7	40. 1	41. 3	52. 5	54. 0	56. 3	37 38. 65	0. 12	29. 76	0 38 8. 53	12. 73
	Lacaille 217 . .	46	. .	. .	. .	33. 2	34. 4	35. 9	37. 4	38. 5	. .	. .	. .	40 35. 88	+ 0. 06	29. 76	0 41 5. 70	12. 67
	Lacaille 224 . .	47	. .	. .	. .	20. 3	21. 4	22. 6	23. 9	25. 0	35. 5	36. 8	38. 9	42 28. 05	— 5. 35	29. 77	0 42 52. 47	12. 78
	Lacaille 239 . .	48	33. 2	35. 6	37. 0	48. 3	49. 6	50. 0	52. 2	53. 5	4. 5	6. 1	8. 3	45 50. 83	+ 0. 12	29. 77	0 46 20. 72	12. 60
	Lacaille 252 . .	49	57. 7	0. 0	1. 2	12. 0	13. 1	14. 4	15. 8	16. 8	27. 4	28. 8	30. 8	48 14. 36	0. 11	29. 77	0 48 44. 24	12. 67
	α Sculptoris . . .	50	16. 6	18. 9	20. 4	31. 6	32. 7	34. 0	35. 4	36. 5	47. 4	49. 0	51. 2	51 33. 97	0. 12	29. 77	0 52 3. 86	12. 52
	Weisse 973 . . .	51	11. 9	13. 9	15. 0	24. 6	25. 7	26. 8	28. 1	29. 1	38. 6	39. 9	41. 7	55 26. 85	0. 10	29. 78	0 55 56. 73	13. 24
	Weisse 1031 . .	52	24. 0	26. 0	27. 2	36. 9	37. 9	39. 0	40. 3	41. 2	50. 7	52. 0	54. 0	58 39. 02	0. 10	29. 78	0 59 8. 90	13. 24
	* + 2° 2′ . . .	53	28. 0	30. 0	31. 2	40. 9	42. 0	43. 1	44. 3	45. 3	54. 8	56. 0	58. 0	1 43. 05	0. 10	29. 78	1 2 12. 93	13. 23
	* + 2° 12′ . . .	54	. .	. .	. .	31. 6	32. 6	33. 8	35. 0	36. 1	. .	. .	. .	5 33. 82	0. 05	29. 78	1 6 3. 65	13. 25
	Polaris	55	. .	. .	. .	3. 5	47. 0	34. 5	22. 0	2. 5	. .	. .	. .	9 33. 90	+ 2. 13	+29. 79	1 10 5. 82	— 122. 63

11. Broken; observed general outline.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 28, 23. 0	+ 29. 69	+ 0. 045	+ 0. 100

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 28	θ Ceti	1	29.2	31.3	32.5	42.2	43.4	44.6	45.8	46.8	56.4	57.6	59.5	16 44.48	+ 0.10	+29.79	1 17 14.37	− 12.80
	Weisse 330	2	30.5	32.7	33.8	43.6	44.7	45.9	47.0	48.0	57.5	58.8	0.8	19 46.75	+ 0.10	29.79	1 20 15.64	13.22
	Weisse 335	3	..	..	..	15.4	16.6	18.6	33.6	35.9	37.2	38.3	39.6	20 29.40	− 25.62	29.79	1 20 33.57	13.22
Y.	B. A. C. 452	4	..	..	..	..	..	..	2.5	5.1	6.4	7.7	9.3	24 6.20	− 37.08	29.80	1 23 58.92	12.10
	Lacaille 444	5	1.0	3.4	4.6	15.2	16.4	17.7	19.0	20.1	30.6	31.9	34.2	26 17.65	+ 0.11	29.80	1 26 47.56	12.14
	B. A. C. 504	6	40.9	43.3	44.5	55.3	56.5	57.8	59.1	0.2	10.7	12.1	14.3	31 57.70	0.11	29.80	1 32 27.61	12.06
	ν Piscium	7	37.2	39.3	40.4	50.2	51.1	52.3	53.5	54.5	4.0	5.3	7.2	34 52.27	+ 0.11	29.81	1 35 22.19	− 13.23
29	Venus I	8	..	..	..	..	..	..	55.5	57.7	59.1	0.3	1.7	33 58.86	− 33.54	30.22	12 33 55.54	+ 1.46
	Polaris, S. P.	†9	40.0	49.0	11.0	49.0	57.5	40.0	36.0	3.0	13.0	27.0	26.5	56 53.82	+ 12 41.15	30.24	1 10 5.21	− 122.89
	α Virginis	10	15.3	17.6	18.7	28.5	29.5	30.7	31.9	32.9	42.5	43.8	45.9	17 30.66	+ 0.09	30.25	13 18 1.00	11.69
	B. A. C. 7745	11	..	..	..	..	..	..	9.3	11.8	13.2	14.5	16.0	6 12.96	− 36.71	30.57	22 6 6.82	14.76
	θ Aquarii	12	54.7	56.6	57.8	7.6	8.6	9.8	11.0	12.0	21.8	22.9	24.9	9 9.79	+ 0.11	30.57	22 9 40.47	13.88
	γ Aquarii	13	53.4	55.3	56.6	6.2	7.3	8.5	9.6	10.6	20.1	21.5	23.3	14 8.40	0.10	30.57	22 14 39.07	13.58
	* — 39° 49′	14	25.2	27.7	29.3	41.9	43.2	44.8	46.4	47.7	59.8	1.6	4.2	19 44.71	0.17	30.57	22 20 15.45	15.56
	Lacaille 9163	15	7.6	10.2	11.6	23.6	25.0	26.2	27.8	29.0	40.6	42.3	44.7	23 26.24	0.15	30.58	22 23 56.97	15.20
	Lacaille 9167	16	41.1	43.6	45.0	57.0	58.2	59.7	1.0	2.3	14.1	15.7	18.3	24 59.64	0.15	30.58	22 25 30.37	15.17
	Lacaille 9199	17	23.7	26.1	27.3	38.5	39.6	41.0	42.4	43.5	54.4	55.9	58.0	30 40.95	0.15	30.58	22 31 11.68	14.69
	ζ Pegasi	18	56.2	58.3	59.5	9.3	10.3	11.4	12.7	13.7	23.4	24.6	26.7	34 11.46	0.09	30.58	22 34 42.13	13.24
	20 Piscis Australis	19	18.1	20.3	21.8	32.5	33.6	34.9	36.2	37.3	47.9	49.4	51.5	37 34.86	0.14	30.58	22 38 5.58	14.43
	Lacaille 9290	20	25.6	27.9	29.3	40.4	41.6	43.0	44.4	45.7	56.5	57.9	0.1	44 42.95	+ 0.15	30.59	22 45 13.69	14.53
	Lacaille 9299	21	..	..	..	47.9	50.1	51.2	36.6	39.2	40.5	41.6	43.1	47 21.28	− 16.98	30.59	22 47 34.89	14.20
	O. Arg. S. 22513	22	..	..	..	50.6	51.9	53.2	54.5	55.7	..	..	..	49 53.18	+ 0.09	30.59	22 50 23.86	14.32
	Lacaille 9315	23	36.4	38.7	40.0	..	..	..	..	..	6.5	7.9	10.0	49 53.25	+ 0.18	30.59	22 50 24.02	14.32
	Lacaille 9330	24	..	..	..	38.9	40.4	42.5	59.3	1.9	3.3	4.6	6.1	52 54.62	− 28.64	30.59	22 52 56.57	14.29
	O. Arg. S. 22544	25	..	..	..	..	..	..	..	8.9	10.3	11.4	13.0	53 10.90	− 37.95	30.59	22 53 3.54	14.29
	Lacaille 9357	26	29.3	31.5	32.7	43.7	44.9	46.3	47.5	48.6	59.3	0.7	3.0	55 46.14	+ 0.14	30.59	22 56 16.87	14.28
	c¹ Aquarii	27	36.1	38.4	39.5	50.4	51.5	52.7	54.0	55.1	5.5	7.0	9.0	58 52.65	0.14	30.60	22 59 23.39	14.13
	Lacaille 9388	28	38.1	40.4	41.8	53.0	54.2	55.6	56.9	58.0	9.0	10.5	12.8	2 55.48	0.15	30.60	23 3 26.23	14.29
	φ Aquarii	29	..	..	..	44.9	45.9	47.1	48.3	49.4	..	..	..	6 47.12	0.06	30.60	23 7 17.78	13.60
	γ Piscium	30	22.4	24.6	25.6	35.4	36.3	37.5	38.6	39.6	49.2	50.4	52.4	9 37.45	0.10	30.60	23 10 8.15	13.60
	96 Aquarii	31	36.2	38.0	39.2	49.0	50.0	51.1	52.3	53.4	2.9	4.2	6.2	11 51.14	0.11	30.60	23 12 21.85	13.56
	κ Piscium	32	13.0	15.0	16.2	26.0	27.0	28.2	29.4	30.3	..	..	..	19 23.14	5.06	30.61	23 19 58.81	13.47
	ι Piscium	33	51.2	52.6	53.9	55.2	57.5	..	57.7	0.0	1.3	2.5	4.0	32 27.59	0.35	30.61	23 32 58.55	13.52
	λ Piscium	34	0.3	1.7	3.0	4.2	6.7	..	..	..	..	..	..	34 3.18	33.76	30.62	23 35 7.56	13.43
	Moon II	35	54.1	55.4	56.8	58.0	0.4	..	2.1	4.6	5.7	6.9	8.2	36 31.22	0.35	30.62	23 37 2.19	. .
30	Lacaille 9528	36	1.9	4.5	5.7	17.1	18.4	19.8	21.0	22.0	33.2	34.9	37.0	28 19.59	0.15	31.07	23 28 50.81	13.95
	ι Piscium	†37	12.6	14.4	15.4	25.4	26.5	27.6	28.8	29.8	39.3	40.4	42.2	32 27.49	0.10	31.07	23 32 58.66	13.53
	Lacaille 9570	38	25.8	28.6	29.9	41.4	42.6	44.0	45.5	46.6	58.0	59.6	2.0	35 44.00	0.15	31.07	23 36 15.22	13.88
	δ Sculptoris	39	3.2	5.5	7.0	17.9	19.1	20.4	21.8	22.8	33.7	35.1	37.3	41 20.35	0.14	31.08	23 41 51.57	13.73
	Lacaille 9619	40	35.9	38.5	39.8	50.9	52.2	53.7	55.2	56.4	7.9	9.3	11.5	43 53.75	0.15	31.08	23 44 24.98	13.73
	Lacaille 9637	41	7.6	10.0	11.5	22.9	24.2	25.4	26.7	27.9	38.9	40.3	42.8	46 25.29	0.15	31.08	23 46 56.52	13.65
	Lacaille 9652	42	20.3	22.5	23.7	34.3	35.5	36.6	37.8	38.8	49.4	50.8	53.0	48 36.61	0.13	31.08	23 49 7.82	13.52
	ω Piscium	†43	34.5	36.3	37.7	47.7	48.7	49.7	51.0	52.0	1.5	2.8	4.8	51 49.70	0.09	31.09	23 52 20.88	13.46
	ζ Sculptoris	44	33.6	36.0	37.5	48.6	49.9	51.3	52.7	53.8	4.8	6.2	8.4	54 51.16	0.15	31.09	23 55 22.40	13.50
	Lacaille 78	45	27.4	30.1	31.4	42.7	43.9	45.4	46.8	48.0	59.1	0.4	2.8	17 45.27	0.20	31.09	0 18 16.56	13.12
	Lacaille 92	46	55.1	57.7	59.0	10.4	11.6	13.1	14.5	15.7	27.1	28.5	30.8	20 13.05	0.21	31.10	0 20 44.36	13.08
	12 Ceti	47	20.5	22.6	23.6	33.7	34.6	35.8	37.0	38.0	47.7	48.8	50.8	22 35.74	0.11	31.11	0 23 6.96	13.27
	Lacaille 131	†48	34.5	37.1	38.3	50.0	51.2	52.6	54.0	55.2	6.7	8.0	10.5	26 52.55	0.21	31.11	0 27 23.87	13.86
	Moon II	49	37.4	39.3	40.4	50.3	51.3	52.6	53.7	54.7	4.7	6.0	8.0	31 52.58	0.13	31.11	0 32 23.82	. .
	Lacaille 194	50	19.6	21.9	23.2	34.7	36.0	37.4	38.7	39.9	51.1	52.5	55.0	37 37.27	0.21	31.12	0 38 8.60	12.77
	δ Piscium	†51	52.1	54.3	55.4	5.3	6.3	7.5	8.8	9.8	19.1	20.4	22.4	41 7.40	+ 0.09	31.12	0 41 38.61	13.43
	Lacaille 224	52	..	..	..	..	..	..	54.0	56.5	57.9	59.0	0.5	42 57.58	− 36.11	31.12	0 42 52.59	12.81
	Lacaille 239	53	31.8	34.1	35.4	46.8	48.0	49.5	50.9	52.0	3.1	4.6	6.9	45 49.37	+ 0.26	31.12	0 46 20.75	12.64
	Lacaille 252	54	56.4	58.6	0.0	10.4	11.6	12.9	14.3	15.4	25.8	27.3	29.6	48 12.94	+ 0.22	+31.13	0 48 44.29	− 12.71

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 29, 21.4	+ 30.54	+ 0.036	+ 0.100
30, 1.1	+ 31.14	+ 0.045	+ 0.100

9. Faint.
37. Very unsteady.
43. Unsteady.
48. Faint.
51. Unsteady.

August 29, 23h. 50m. Image 0.00 r. Clamp west.

August 29. Night cloudy.

August 29, 12h. to 14h. n. = + 0.067 s.
29, 22h. to 0h. − 0.053.
30, before 0h. 0.053.
30, 0h. to 0h. 40m. 0.142.
30, 0h. 40m. to 6h. − 0.230.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
30	α Sculptoris	1	15.1	17.7	19.0	30.1	31.4	32.6	34.1	35.2	46.1	47.5	49.9	51.32.61	+ 0.25	+31.13	0 52 3.99	— 12.56
	70 Piscium	2	17.0	19.2	20.4	30.2	31.4	32.5	33.7	34.6	44.1	45.3	47.3	54.32.34	0.07	31.13	0 55 3.54	13.44
	ε Piscium	3	7.9	9.7	10.9	20.8	22.0	23.1	24.2	25.2	34.7	35.6	38.0	55.22.94	+ 0.07	31.13	0 55 54.14	13.42
r.	B. A. C. 306	4	. .	. .	. .	34.3	35.5	36.9	38.4	39.5	51.2	52.5	55.0	57.42.91	— 5.75	31.13	0 58 8.29	12.35
	ε Piscium	5	36.5	38.7	39.7	49.5	50.4	51.6	52.9	53.9	3.4	4.7	6.6	0.51.63	+ 0.08	31.14	1 1 22.85	13.36
	ζ Piscium	6	51.9	54.1	55.4	5.1	6.3	7.4	8.7	9.7	19.0	20.3	22.2	6 7.28	+ 0.07	31.14	1 6 38.49	13.42
	B. A. C. 369	7	. .	. .	. .	. .	. .	. .	38.8	41.3	42.4	43.5	45.0	6 42.20	— 33.32	31.14	1 6 40.02	13.42
	Polaris	8	. .	. .	. .	. .	51.0	45.0	. .	. .	. .	. .	. .	9 18.00	+ 16.78	31.14	1 10 5.92	123.75
	ο Piscium	9	. .	. .	. .	54.2	55.4	57.6	12.6	14.7	16.0	17.3	19.0	38 8.35	— 25.87	31.16	1 38 13.64	13.47
	α Orionis	10	1.5	3.6	4.9	14.5	15.6	16.8	18.0	19.0	28.6	29.8	31.8	14 16.74	+ 0.07	31.35	5 47 48.18	12.49
31	ε Piscium	†11	8.2	10.1	11.3	21.0	22.1	23.2	24.5	25.7	35.2	36.3	38.3	55 23.26	0.08	30.92	0 55 54.26	13.44
	ε Piscium	†12	15.2	16.6	17.9	19.1	21.6	36.9	38.8	39.9	3.7	4.9	6.7	0 36.48	+ 15.46	30.92	1 1 22.86	13.38
	Polaris	13	. .	. .	. .	11.0	54.0	42.0	29.0	10.0	. .	. .	. .	9 41.20	— 5.30	30.91	1 10 6.81	124.37
	η Piscium	14	27.1	29.1	30.5	40.3	41.5	42.7	43.9	45.0	54.7	56.0	57.9	23 42.61	+ 0.06	30.90	1 24 13.57	13.75
	Moon II	15	28.7	30.7	31.9	42.1	43.0	44.4	45.6	46.7	56.6	57.9	59.9	26 44.32	+ 0.06	30.90	1 27 15.28	. .
	105 Piscium	16	. .	. .	. .	48.5	49.5	50.8	52.0	53.1	3.0	4.3	6.4	31 55.95	— 5.13	30.90	1 32 21.72	13.81
	ο Piscium	17	. .	. .	. .	40.5	41.6	42.8	44.0	45.0	. .	. .	. .	37 42.78	+ 0.03	30.90	1 38 13.71	13.49
	γ Geminorum	18	3.9	6.2	7.4	17.4	18.4	19.7	20.9	22.0	31.9	33.2	35.2	29 19.65	+ 0.16	30.76	6 29 50.57	13.15
t. 1	Sun I	†19	. .	. .	. .	58.2	59.4	1.4	16.5	19.0	20.1	21.2	22.7	40 12.31	— 25.87	. .	. . . .	. .
	Sun II	†20	40.0	41.9	43.1	53.1	54.2	55.3	56.5	57.5	7.2	8.3	10.3	41 55.22	+ 0.14	. .	. . . .	. .
	Venus	†21	18.1	20.1	21.5	31.1	32.2	33.4	34.7	35.7	45.2	46.6	48.6	35 33.34	0.11	. .	. . . .	. .
	Polaris, S. P	22	. .	. .	. .	. .	. .	. .	38.0	7.5	17.0	31.5	32.5	47 25.30	22 11.01	. .	. . . .	124.70
	β Lyræ	23	15.6	18.1	19.4	31.0	32.3	33.6	34.9	36.2	47.5	49.2	51.5	44 33.57	+ 0.10	30.66	18 45 4.33	9.71
	(Comp.) β Lyræ	24	. .	. .	. .	. .	. .	. .	11.0	13.8	15.2	16.6	18.4	45 15.00	— 39.53	30.66	18 45 6.13	9.70
	Lacaille 7953	25	17.7	20.2	21.4	33.1	34.3	35.8	37.3	38.4	49.8	51.3	53.6	51 35.72	+ 0.20	30.67	18 52 6.59	16.53
	Lacaille 7960	26	. .	. .	. .	20.2	21.8	24.3	42.7	45.7	47.0	48.4	50.3	53 37.55	— 31.63	30.67	18 53 36.59	16.94
	Lacaille 7985	27	55.0	57.7	59.0	11.7	12.0	13.4	14.9	16.1	27.5	29.1	31.4	56 13.35	+ 0.20	30.68	18 56 44.23	16.60
	* — 34° 0′	28	0.3	2.6	4.1	15.8	17.0	18.3	19.7	21.0	32.4	33.8	36.3	59 18.30	0.20	50.68	18 59 49.18	16.61
	Lacaille 7998	29	. .	36.8	38.5	39.9	42.6	. .	55.3	58.0	59.5	0.5	. .	59 18.94	0.50	30.68	18 59 50.12	16.61
	* — 29° 30′	30	. .	. .	. .	18.0	19.3	20.5	22.0	23.1	. .	. .	. .	5 20.58	0.14	30.68	19 5 51.40	16.02
	B. A. C. 6569	31	52.4	53.9	55.5	56.9	59.6	. .	8.7	11.4	12.7	14.1	15.6	5 34.08	0.48	30.68	19 6 5.24	16.02
	Lacaille 8060	32	42.3	44.8	46.1	57.8	59.0	0.4	1.9	2.9	14.5	16.0	18.4	9 0.37	0.20	30.68	19 9 31.25	16.54
	Lacaille 8077	33	41.7	44.2	45.6	57.5	58.6	0.2	1.6	2.8	14.5	16.1	18.5	12 0.12	0.21	30.68	19 12 31.01	16.78
	Lacaille 8090	34	3.4	6.1	7.5	19.3	20.5	22.0	23.4	24.6	36.3	37.9	40.2	14 21.93	0.21	30.68	19 14 52.82	16.78
	δ Aquilæ	35	53.4	55.4	56.6	6.3	7.1	8.4	9.7	10.6	20.1	21.4	23.4	18 8.40	0.12	30.69	19 18 39.21	12.91
	Lacaille 8121	36	23.7	26.7	28.1	41.5	42.9	44.5	46.1	47.5	0.6	2.2	4.7	21 44.41	0.24	30.69	19 22 15.34	17.96
	Lacaille 8138	37	58.7	1.6	3.1	15.7	17.1	18.7	20.3	21.5	34.0	35.6	38.2	24 18.59	0.23	30.69	19 24 49.51	17.54
	* — 41° 50′.	38	54.1	55.9	57.6	59.2	2.4	. .	23.0	26.0	27.7	29.1	31.1	27 42.61	0.57	30.69	19 28 13.87	17.77
	Lacaille 8158	39	19.7	22.5	24.1	37.2	38.5	40.0	41.3	42.9	56.0	57.2	0.0	27 39.95	0.23	30.69	19 28 10.87	17.77
	Lacaille 8170	40	8.4	11.1	12.6	25.6	26.9	28.7	30.2	31.6	44.3	45.9	48.7	29 28.55	0.24	30.69	19 29 59.48	17.78
	Lacaille 8197	41	12.2	15.0	16.3	29.8	31.1	32.6	34.4	35.6	48.2	50.0	52.6	34 32.53	0.24	30.69	19 35 3.46	17.77
	Lacaille 8209	42	. .	. .	. .	20.0	21.4	23.0	24.6	25.8	. .	. .	. .	37 22.96	0.17	30.69	19 37 53.82	18.06
	B. A. C. 6778	43	24.9	28.0	29.7	. .	. .	. .	. .	. .	1.2	2.9	5.6	40 45.38	0.29	30.69	19 41 16.36	17.79
	ι Sagittarii	44	2.2	5.1	6.4	19.5	21.0	22.5	24.2	25.4	38.2	40.0	42.7	45 22.47	0.24	30.70	19 45 53.41	17.77
	B. A. C. 6829	45	28.0	30.3	31.6	42.9	44.0	45.4	46.8	48.0	59.1	0.7	2.9	47 45.43	0.19	30.70	19 48 16.32	16.15
	B. A. C. 6841	46	35.3	37.6	39.0	50.3	51.5	53.0	54.3	55.5	6.6	8.0	10.2	49 52.85	0.19	30.70	19 50 23.74	16.14
	Lacaille 8307	47	0.4	3.2	5.0	18.1	19.5	21.1	22.7	24.2	37.4	39.0	41.6	53 21.11	+ 0.25	30.70	19 53 52.06	17.90
	B. A. C. 6888	48	7.1	9.4	10.6	37.3	38.7	40.8	57.6	0.2	1.4	2.8	4.4	56 40.94	— 16.74	30.70	19 56 54.90	— 15.70
	λ Ursæ Minoris	49	. .	. .	. .	. .	33.0	37.0	40.0	. .	. .	. .	. .	0 36.67	— 0.68	30.70	20 1 6.69	+ 167.04
	Dorpat 2643.	50	55.9	58.0	59.2	8.8	9.8	11.1	12.2	13.3	22.8	24.0	25.9	5 11.00	+ 0.12	30.70	20 5 41.82	— 13.53
	α² Capricorni	51	45.1	47.2	48.3	58.3	59.3	0.5	1.7	2.9	12.5	13.8	16.1	10 0.52	0.14	30.71	20 10 31.37	14.34
	B. A. C. 7011	52	34.1	36.5	37.9	48.9	50.3	51.4	52.7	54.0	5.0	6.4	8.7	15 51.45	0.19	30.71	20 16 22.35	15.88
	B. A. C. 7026	53	24.9	27.1	28.5	39.5	40.8	42.1	43.5	44.6	55.5	57.0	59.1	17 42.05	0.19	30.71	20 18 12.95	15.87
	B. A. C. 7039	54	38.1	40.4	41.5	52.2	53.2	54.4	56.0	57.0	7.4	8.9	11.0	19 54.55	+ 0.17	+30.71	20 20 25.43	— 15.36

11. Through clouds.
12. Through clouds.
19–20–21. Clock error unreliable.

August 31. All the stars through clouds.

September 1, 21h. 30m. Image east 0.06 r. Clamp west.

August 31, . . n. = — 0.184 s.
September 1, 10h. to 13h. + 0.115.
18h. to 22h. — 0.080.
1h. to 3h. — 0.152.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Aug. 31, 2.6	+ 30.87	— 0.029	+ 0.100
Sept. 1, 21.8	+ 30.74	+ 0.026	+ 0.124

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Sept. 1	B. A. C. 7040 . .	1	. .	. .	. .	23. 4	24. 6	26. 9	43. 2	45. 7	47. 0	48. 3	49. 8	20 38. 61	− 28. 03	+30. 71	20 20 41. 29	− 15. 34
	B. A. C. 7057 . .	2	. .	.	. .	20. 3	21. 8	24. 1	41. 4	44. 0	45. 3	46. 6	48. 4	22 36. 49	29. 33	30. 71	20 22 37. 87	15. 86
	O. Arg. S. 20575 .	3	. .	. .	. .	. .	. .	. .	8. 2	11. 0	12. 4	13. 5	15. 1	24 12. 04	- 37. 74	30. 72	20 24 5. 02	15. 80
Y.	B. A. C. 7071 . .	4	. .	. .	. .	52. 0	53. 2	54. 5	56. 6	57. 1	. .	. .	. .	23 54. 56	+ 0. 14	30. 71	20 24 25. 41	15. 80
	Lacaille 8492 . .	5	36. 5	38. 9	40. 3	51. 5	52. 7	54. 1	55. 6	56. 7	7. 7	9. 1	11. 3	25 54. 04	0. 19	30. 72	20 26 24. 95	15. 99
	B. A. C. 7111 . .	6	. .	. .	. .	14. 1	15. 2	16. 3	17. 7	18. 8	. .	. .	. .	29 16. 42	0. 12	30. 72	20 29 47. 26	15. 09
	Lacaille 8517 . .	7	59. 6	2. 0	3. 5	15. 3	16. 4	18. 0	19. 3	20. 5	31. 9	33. 5	35. 7	31 17. 79	0. 20	30. 72	20 31 48. 71	16. 30
	Lacaille 8539 . .	8	51. 0	53. 3	54. 7	6. 1	7. 4	8. 8	10. 2	11. 3	22. 6	24. 2	26. 5	35 8. 74	0. 20	30. 72	20 35 39. 66	16. 10
	O. Arg. S. 20817 .	9	. .	. .	. .	41. 2	42. 3	43. 5	44. 9	45. 9	. .	. .	. .	37 43. 56	+ 0. 12	30. 72	20 38 14. 40	15. 26
	B. A. C. 7180 . .	10	. .	. .	. .	0. 5	1. 8	4. 0	20. 5	23. 0	24. 2	25. 5	26. 1	38 15. 82	− 27. 99	30. 72	20 38 18. 55	15. 26
	Lacaille 8574 . .	11	11. 6	14. 0	15. 2	26. 7	27. 8	29. 1	30. 5	31. 7	42. 6	44. 3	46. 6	40 29. 10	+ 0. 19	30. 72	20 41 0. 01	15. 88
	μ Aquarii	12	34. 0	36. 1	37. 4	47. 1	48. 2	49. 4	50. 6	51. 6	1. 2	2. 5	4. 5	44 49. 33	0. 14	30. 72	20 45 20. 19	14. 05
	32 Vulpeculæ . . .	13	59. 3	1. 7	2. 9	13. 8	15. 0	16. 4	17. 8	19. 0	29. 6	31. 1	33. 3	48 16. 35	0. 18	30. 73	20 48 47. 26	11. 57
	Lacaille 8640 . .	14	2. 8	5. 2	6. 6	. .	. .	. .	. .	. .	33. 8	35. 2	37. 6	52 20. 20	0. 24	30. 73	20 52 51. 17	15. 75
	* — 30° 17′ . .	15	. .	. .	. .	20. 9	22. 1	23. 4	24. 9	26. 0	. .	. .	. .	56 23. 46	0. 14	30. 73	20 56 54. 33	15. 72
	* — 32° 54′ . .	16	3. 8	6. 3	7. 7	19. 2	20. 5	21. 9	23. 4	24. 6	35. 8	37. 3	39. 7	57 21. 84	0. 20	30. 73	20 57 52. 77	15. 98
	* — 32° 54′ . . .	17	17. 6	20. 1	21. 5	33. 0	34. 3	35. 0	37. 1	38. 4	49. 5	51. 2	53. 4	0 35. 62	0. 20	30. 73	21 1 6. 55	15. 96
	B. A. C. 7340 . .	18	32. 4	34. 5	35. 8	46. 3	47. 6	48. 9	50. 3	51. 4	1. 7	3. 0	5. 1	0 48. 82	0. 17	30. 73	21 1 19. 72	15. 14
	B. A. C. 7436 . .	19	12. 4	14. 6	15. 9	26. 6	27. 7	28. 9	30. 2	31. 3	41. 8	43. 2	45. 3	17 28. 90	0. 17	30. 74	21 17 59. 81	15. 06
	5 Piscis Australis .	20	8. 3	10. 7	12. 1	23. 6	24. 7	26. 2	27. 5	28. 6	39. 8	41. 3	43. 6	20 26. 04	+ 0. 19	30. 74	21 20 56. 97	15. 67
	β Aquarii	21	. .	. .	. .	5. 8	7. 1	9. 2	24. 1	26. 4	27. 7	28. 7	30. 4	24 19. 92	− 25. 69	30. 74	21 24 24. 97	13. 82
	β Cephei	22	. .	. .	. .	20. 5	23. 3	27. 2	30. 7	33. 3	. .	. .	. .	26 27. 00	0. 00	30. 74	21 26 57. 74	7. 32
	Polaris	23	. .	. .	. .	. .	. .	. .	47. 0	20. 0	4. 0	52. 0	49. 0	31 58. 40	− 22 21. 81	30. 84	1 10 7. 43	125. 03
	Weisse 767 . . .	24	53. 8	55. 9	57. 1	7. 1	8. 2	9. 3	10. 5	11. 5	21. 0	22. 3	24. 4	43 9. 19	+ 0. 10	30. 84	1 43 40. 13	13. 58
	β Arietis	25	22. 0	24. 1	25. 2	35. 6	36. 8	38. 1	39. 2	40. 3	50. 5	51. 8	54. 0	46 37. 96	0. 08	30. 84	1 47 8. 88	14. 11
	ι Arietis	26	9. 8	11. 9	13. 1	23. 2	24. 5	25. 6	26. 7	27. 8	37. 6	39. 0	41. 1	49 25. 48	0. 09	30. 84	1 49 56. 41	13. 94
	α Arietis	27	44. 3	46. 5	47. 7	58. 4	59. 5	0. 8	2. 1	3. 1	13. 3	14. 8	16. 9	59 0. 67	0. 07	30. 85	1 59 31. 59	− 14. 37
	Moon II	28	12. 2	14. 1	15. 5	25. 8	27. 0	28. 2	29. 6	30. 6	40. 7	41. 9	43. 9	21 28. 14	+ 0. 09	30. 85	2 21 59. 08	. .
2	Mercury I . . .	29	. .	. .	. .	11. 7	13. 1	15. 3	30. 1	32. 3	33. 5	34. 5	36. 0	10 25. 81	− 25. 66	30. 53	12 10 30. 68	+ 0. 20
	Venus I	30	46. 5	48. 7	49. 8	59. 5	0. 5	1. 7	2. 9	4. 0	13. 6	14. 9	17. 1	36 1. 75	+ 0. 11	30. 53	12 36 32. 39	+ 1. 56
	Polaris, S. P. . .	†31	. .	42. 0	59. 0	14. 0	54. 0	. .	32. 0	. .	. .	. .	. .	5 40. 20	3 56. 94	30. 54	13 10 7. 68	− 125. 37
	α Virginis	†32	. .	. .	. .	28. 0	29. 2	30. 3	31. 6	32. 7	. .	. .	. .	17 30. 36	0. 06	30. 55	13 18 0. 97	11. 66
	α Bootis	†33	. .	. .	. .	8. 3	9. 8	11. 8	27. 8	30. 1	31. 5	32. 6	33. 9	9 23. 22	27. 15	30. 56	14 9 26. 63	10. 06
	Weisse 1443 . .	34	5. 5	6. 8	8. 2	9. 5	. .	. .	. .	15. 0	16. 1	17. 4	18. 7	56 42. 15	0. 41	30. 63	18 57 13. 19	13. 81
	Weisse 1449 . .	35	38. 8	40. 8	41. 9	51. 9	52. 9	54. 1	55. 3	56. 3	6. 0	7. 2	9. 1	56 54. 03	0. 14	30. 63	18 57 24. 80	13. 80
	B. A. C. 6540 . .	36	44. 9	47. 2	48. 5	58. 8	59. 0	1. 3	2. 6	3. 7	14. 1	15. 4	17. 6	0 1. 19	0. 17	30. 64	19 0 32. 00	15. 28
	O. Arg. N. 18967 .	37	. .	. .	. .	33. 6	36. 4	40. 2	43. 8	46. 5	. .	. .	. .	2 40. 10	0. 43	30. 64	19 3 11. 17	1. 08
	O. Arg. N. 18980 .	38	. .	. .	. .	11. 7	14. 6	17. 8	21. 3	24. 0	. .	. .	. .	3 17. 88	0. 43	30. 64	19 3 48. 95	1. 19
	ψ Sagittarii . . .	39	25. 3	27. 4	28. 9	39. 5	40. 7	42. 1	43. 4	44. 5	55. 0	56. 4	58. 5	6 41. 97	0. 17	30. 64	19 7 12. 78	15. 53
	ω Aquilæ	40	40. 7	42. 8	43. 9	53. 8	54. 9	56. 2	57. 4	58. 4	7. 9	9. 3	11. 3	10 56. 05	0. 14	30. 64	19 11 26. 83	12. 08
	O. Arg. S. 19451 .	41	5. 2	7. 6	8. 9	. .	. .	. .	. .	. .	35. 3	36. 5	38. 8	14 22. 05	0. 21	30. 64	19 14 52. 90	15. 65
	O. Arg. S. 19502 .	42	. .	. .	. .	14. 4	15. 6	16. 9	18. 3	19. 4	. .	. .	. .	16 16. 92	0. 12	30. 64	19 16 47. 68	15. 61
	O. Arg. S. 19516 .	43	. .	. .	. .	55. 3	56. 5	57. 7	59. 1	0. 4	. .	. .	. .	16 57. 80	0. 12	30. 64	19 17 28. 56	15. 61
	O. Arg. S. 19591 .	44	. .	. .	. .	0. 8	1. 9	3. 2	4. 6	5. 5	. .	. .	. .	20 3. 20	0. 12	30. 64	19 20 33. 96	15. 60
	O. Arg. S. 19600 .	45	. .	. .	. .	18. 2	19. 5	20. 7	21. 9	23. 0	. .	. .	. .	20 20. 66	0. 12	30. 64	19 20 51. 42	15. 60
	O Arg. S. 19609 .	46	. .	. .	. .	45. 1	46. 2	47. 5	49. 0	49. 9	. .	. .	. .	20 47. 54	0. 12	30. 64	19 21 18. 30	15. 60
	B. A. C. 6685 . .	47	45. 7	48. 1	49. 3	0. 2	1. 3	2. 5	3. 9	4. 9	15. 6	16. 9	19. 2	24 2. 51	0. 12	30. 64	19 24 33. 27	15. 63
	h^1 Sagittarii . . .	48	59. 5	1. 7	3. 0	13. 8	14. 9	16. 2	17. 4	18. 5	19. 0	30. 3	32. 5	27 16. 07	0. 17	30. 64	19 27 46. 88	15. 48
	53 Sagittarii . . .	49	29. 1	30. 7	32. 0	33. 4	36. 1	. .	41. 6	44. 2	45. 6	46. 6	48. 3	31 8. 76	0. 44	30. 64	19 31 39. 84	15. 35
	B. A. C. 6727 . .	50	46. 5	48. 0	49. 5	50. 9	53. 4	. .	59. 2	1. 6	2. 9	4. 1	5. 7	31 26. 18	+ 0. 44	30. 64	19 31 57. 26	15. 35
	Lacaille 8191 . .	51	. .	. .	. .	. .	. .	. .	57. 9	0. 8	2. 2	3. 6	5. 5	34 2. 00	− 41. 72	30. 64	19 33 50. 92	17. 10
	Lacaille 8196 . .	52	. .	. .	. .	. .	. .	. .	39. 9	42. 9	44. 3	45. 8	47. 7	34 44. 12	− 41. 78	30. 64	19 34 32. 98	17. 11
	Lacaille 8214 . .	53	6. 7	9. 3	10. 6	22. 0	23. 4	24. 7	26. 2	27. 5	38. 6	40. 0	42. 3	37 24. 66	+ 0. 20	30. 65	19 37 55. 51	16. 33
	γ Aquilæ	54	2. 5	4. 6	5. 7	15. 5	16. 7	18. 0	19. 2	20. 1	29. 7	31. 0	33. 0	39 17. 82	0. 11	30. 65	19 39 48. 58	12. 34
	B. A. C. 6786 . .	55	14. 7	17. 1	18. 3	29. 2	30. 3	31. 6	32. 9	34. 0	44. 8	46. 0	48. 3	41 31. 56	+ 0. 18	+30. 65	19 42 2. 39	− 15. 70

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 2, 18. 7	+ 30. 63	+ 0. 016	+ 0. 124
3. 2	+ 30. 74	+ 0. 015	. .

31. Through clouds.
32. Unsteady.
33. Unsteady.

September 2, 22h. 10m. Image east $\overset{r.}{0.04}$. Clamp west.

September 2. 12h. to 15h. n. = $+\overset{s.}{0.071}$.
18h. to 2h. — 0. 080.
2h. to 4h. — 0. 152.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 2	Lacaille 8253 . .	1	24.5	27.0	28.6	40.5	41.7	43.2	44.9	45.9	57.8	59.4	1.7	44 43.20	+ 0.21	+30.65	19 45 14.06	— 16.86
	B. A. C. 6816 . .	2	. .	. .	. .	. .	. .	. .	27.7	30.5	32.0	33.2	35.1	46 31.70	— 39.52	30.65	19 46 22.83	16.46
	Lacaille 8287 . .	3	52.8	55.5	57.3	9.3	10.6	12.0	13.6	15.0	25.8	38.5	31.0	50 11.95	+ 0.22	30.65	19 50 42.82	17.04
.	Lacaille 8312 . .	4	46.9	49.6	50.9	3.2	4.6	6.0	7.4	8.8	20.9	22.5	24.9	54 5.97	0.22	30.65	19 54 36.84	17.04
	Lacaille 8326 . .	5	. .	. .	. .	49.2	50.6	52.0	53.5	54.8	. .	. .	. .	55 52.02	+ 0.15	30.65	19 56 22.82	— 16.86
	λ Ursæ Minoris . .	6	. .	. .	. .	37.5	33.0	34.5	40.0	30.5	. .	. .	. .	0 35.10	— 0.13	30.65	20 1 5.62	+ 168.50
	B. A. C. 6948 . .	7	36.2	38.6	39.7	50.9	52.3	53.6	55.1	56.1	7.3	8.6	11.0	6 53.58	+ 0.19	30.65	20 7 24.42	— 16.22
	Lacaille 8403 . .	8	35.3	37.8	39.0	50.6	51.9	53.3	54.7	59.9	7.2	8.8	11.1	10 53.61	0.20	30.65	20 11 24.46	16.31
	Lacaille 8414 . .	9	49.0	51.4	52.8	4.4	5.6	7.0	8.4	9.6	21.0	22.4	24.7	12 6.94	0.20	30.66	20 12 37.80	16.32
	Lacaille 8432 . .	10	. .	. .	. .	46.7	47.9	49.3	50.8	52.0	. .	. .	. .	16 49.34	0.15	30.66	20 17 20.15	16.40
	Lacaille 8450 . .	11	4.8	7.3	8.7	20.6	21.7	23.2	24.6	25.8	37.5	38.9	41.4	19 23.14	0.21	30.66	20 19 54.01	16.49
	B. A. C. 7057 . .	12	49.7	52.0	53.3	4.5	5.6	6.9	8.3	9.5	20.4	21.9	24.2	22 6.94	0.19	30.66	20 22 37.79	15.85
	ε Delphini . . .	13	58.0	0.0	1.2	11.0	12.0	13.3	14.4	15.5	25.3	26.4	28.5	26 13.24	0.11	30.66	20 26 44.01	12.56
	Lacaille 8529 . .	14	. .	. .	. .	24.9	26.0	27.5	28.9	30.2	. .	. .	. .	32 27.50	0.14	30.66	20 32 58.30	16.07
	Lacaille 8539 . .	15	50.8	53.3	54.6	6.1	7.3	8.7	10.1	11.3	22.5	24.0	26.3	35 8.64	0.20	30.66	20 35 39.50	16.09
	Lacaille 8546 . .	16	. .	. .	. .	31.2	32.5	33.9	35.3	36.4	. .	. .	. .	36 33.86	0.13	30.66	20 37 4.65	15.93
	Lacaille 8559 . .	17	38.4	41.3	42.9	56.1	57.8	59.3	1.0	2.5	15.6	17.2	20.0	38 59.28	0.25	30.66	20 39 30.19	17.52
	Lacaille 8586 . .	18	54.7	57.5	58.9	11.9	13.3	14.8	16.6	17.8	30.3	32.1	34.5	42 14.76	0.24	30.66	20 42 45.66	17.17
	Lacaille 8603 . .	19	48.7	51.6	52.9	5.9	7.2	8.7	10.4	11.7	24.4	26.1	28.7	44 8.75	0.24	30.66	20 44 39.65	17.17
	Lacaille 8620 . .	20	48.9	51.2	52.7	. .	. .	. .	. .	. .	26.2	28.0	30.6	48 9.60	+ 0.31	30.67	20 48 40.58	17.58
	Lacaille 8628 . .	21	. .	. .	. .	. .	. .	. .	8.2	11.2	12.9	14.7	16.4	51 12.68	— 45.51	30.67	20 50 57.84	17.39
	Lacaille 8638 (1st *)	22	51.6	53.5	55.4	57.2	0.5	. .	23.3	26.5	28.2	29.9	31.8	52 41.79	+ 0.60	30.67	20 53 13.06	17.36
	Lacaille 8638 (2d *)	23	26.4	29.3	30.7	44.2	45.5	47.2	48.9	50.3	3.4	4.9	7.8	52 47.15	+ 0.25	30.67	20 53 18.07	17.36
	Lacaille 8681 . .	24	. .	. .	. .	41.3	43.0	45.2	3.7	4.6	7.9	9.3	11.2	57 58.50	— 36.28	30.67	20 57 52.89	16.22
	Lacaille 8693 . .	25	. .	. .	. .	51.6	52.9	55.6	14.4	17.4	18.9	20.4	22.2	0 9.17	— 32.27	30.67	21 0 7.57	16.51
	Lacaille 8722 . .	26	30.2	32.8	34.2	46.2	47.5	49.0	50.5	51.7	3.5	5.1	7.5	3 48.93	+ 0.21	30.67	21 4 19.81	16.29
	ζ Cygni	27	22.3	24.5	25.9	37.0	38.2	39.6	41.0	42.3	53.1	54.5	56.9	6 39.57	0.10	30.67	21 7 10.34	11.63
	Lacaille 8776 . .	28	4.6	6.8	8.2	19.1	20.3	21.6	23.1	24.1	35.0	36.3	38.4	11 21.59	0.18	30.67	21 11 52.44	15.38
	Lacaille 8787 . .	29	57.4	59.6	0.9	12.3	13.4	14.7	16.1	17.3	28.1	29.5	31.8	13 14.65	0.19	30.67	21 13 45.51	15.54
	B. A. C. 7419 . .	30	15.4	17.5	18.9	29.6	30.8	32.1	33.5	34.5	45.1	46.4	48.6	15 32.04	0.17	30.67	21 16 2.88	15.18
	B. A. C. 7434 . .	31	8.4	10.6	11.8	22.4	23.6	25.0	26.2	27.3	37.8	39.4	41.4	17 24.90	0.17	30.67	21 17 55.74	15.17
	5 Piscis Australis .	32	8.4	10.8	12.3	23.6	24.8	26.2	27.5	28.7	40.1	41.5	43.7	20 26.15	0.19	30.67	21 20 57.01	15.67
	β Aquarii	33	39.1	41.2	42.3	52.1	53.1	54.4	55.5	56.5	5.9	7.0	9.1	23 54.20	0.13	30.67	21 24 25.00	13.82
	β Cephei	34	43.2	49.0	52.5	20.3	23.6	27.1	30.5	33.5	1.1	4.7	10.6	26 26.92	0.14	30.68	21 26 57.74	7.27
	Lacaille 8863 . .	35	34.1	36.4	37.7	48.6	49.6	51.0	52.2	53.4	3.9	5.4	7.5	29 50.89	0.17	30.68	21 30 21.74	15.10
	Lacaille 8890 . .	36	12.0	14.2	15.5	26.1	27.3	28.6	29.9	31.0	41.5	42.9	45.1	33 28.55	0.17	30.68	21 33 59.40	15.04
	11 Piscis Australis .	37	0.0	2.2	3.5	14.6	15.7	17.2	18.5	19.7	30.4	31.9	34.1	51 17.07	0.18	30.68	21 51 47.93	15.08
	Lacaille 9003 . .	38	8.7	10.2	12.5	23.4	24.5	26.0	27.3	28.4	39.2	40.6	42.8	54 25.78	0.18	30.68	21 54 56.64	15.03
	α Aquarii	39	3.1	5.3	6.4	16.1	17.1	18.2	19.4	20.4	29.8	31.2	33.2	58 18.20	0.12	30.68	21 58 49.00	13.55
	B. A. C. 775 . .	40	34.1	36.3	37.5	48.1	49.3	50.5	51.7	52.7	3.3	4.5	6.8	23 50.44	0.20	30.73	2 24 21.37	11.57
	Lacaille 772 . .	41	41.5	44.0	45.3	56.0	57.2	58.5	59.8	1.0	11.9	13.0	15.4	25 58.51	0.22	30.73	2 26 29.46	11.24
	Lacaille 792 . .	42	. .	. .	. .	42.4	43.7	45.0	46.3	47.4	. .	. .	. .	28 44.96	0.18	30.73	2 29 15.87	11.08
	Lacaille 813 . .	43	5.4	7.8	9.0	19.8	20.9	22.2	23.6	24.8	35.3	36.9	38.9	32 22.24	0.22	30.73	2 32 53.19	11.24
	γ Ceti	44	30.0	32.1	33 3	42.8	43.9	45.0	46.1	47.1	56.8	58.2	0.2	35 45.05	0.12	30.73	2 36 15.90	13.03
	π Arietis	45	56.5	58.7	59.8	9.9	11.0	12.2	13.4	14.5	24.5	25.8	27.8	41 12.19	0.08	30.73	2 41 43.00	14.00
	B. A. C. 883 . .	46	. .	. .	. .	27.7	28.8	30.3	31.7	32.9	. .	. .	. .	43 30.28	0.17	30.73	2 44 1.18	10.92
	Lacaille 908 . .	47	24.2	26.6	27.8	38.3	39.4	40.8	41.9	42.9	53.3	54.6	56.8	46 40.60	0.20	30.73	2 47 11.53	11.32
	Lacaille 932, (1st *)	48	3.3	4.9	6.2	7.6	10.2	. .	17.0	19.4	20.7	22.0	23.5	50 43.48	0.49	30.73	2 51 14.70	11.05
	Lacaille 932, (2d *)	49	28.4	30.4	31.8	42.7	43.8	45.1	46.4	47.4	58.2	59.6	1.8	50 45.05	+ 0.21	30.73	2 51 15.99	11.05
	B. A. C. 951 . .	50	. .	. .	. .	28.8	30.2	32.5	49.4	52.1	53.3	54.6	56.3	55 44.65	— 29.03	30.74	2 55 46.36	10.74
	κ Persei	51	29.3	32.1	33.5	47.1	48.4	50.1	51.5	53.0	6.5	8.4	11.1	59 50.09	+ 0.32	30.74	3 0 21.15	16.84
	δ Arietis	52	5.3	7.3	8.6	18.9	19.9	21.2	22.4	23.4	33.5	35.0	36.9	3 21.13	0.08	30.74	3 3 51.95	14.21
	ζ Arietis	53	19.1	21.2	22.3	32.7	33.9	35.2	36.4	37.4	47.6	49.0	51.0	6 34.97	0.08	30.74	3 7 5.79	14.29
	τ^1 Arietis	54	36.5	38.6	39.7	50.1	51.2	52.5	53.8	54.7	5.0	6.4	8.3	12 52.44	0.08	30.74	3 13 23.26	14.30
	Moon II	55	54.9	57.1	58.7	9.0	10.1	11.4	12.8	13.7	24.1	25.2	27.4	16 11.31	+ 0.08	+30.74	3 16 42.13	— . .

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 2, 18.7	+ 30.63	+ 0.016	+ 0.124
3.2	+ 30.74	+ 0.015	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Sept. 2	Weisse 334	1	. .	. .	. .	30.9	32.2	34.2	49.7	52.0	53.1	54.0	55.6	19 45.25	— 26.19	+30.74	3 19 49.80	— 13.58
	Groombridge 698	2	9.9	12.8	14.3	27.4	28.5	30.2	32.0	33.4	46.2	48.0	50.4	22 30.28	+ 0.03	30.74	3 23 1.05	16.69
	ε Eridani	3	. .	. .	. .	12.9	14.1	16.1	31.3	33.6	34.9	36.0	37.4	26 27.04	— 25.91	30.74	3 26 31.87	11.62
Y.	Lacaille 1137	4	. .	. .	. .	31.2	32.3	33.5	35.0	36.0	. .	. .	. .	28 33.60	+ 0.16	30.74	3 29 4.50	10.52
	11 Tauri	5	52.2	54.5	55.7	6.3	7.4	8.8	10.0	11.1	21.7	23.1	25.4	32 8.75	0.07	30.75	3 32 39.57	14.57
	17 Tauri	6	1.3	3.4	4.8	15.4	16.5	17.8	19.2	20.2	30.6	31.7	33.9	36 17.71	+ 0.07	30.75	3 36 48.53	14.57
	24 Tauri	7	. .	. .	. .	. .	. .	. .	18.1	20.9	22.2	23.5	25.0	39 21.94	— 36.13	30.75	3 39 16.56	14.57
	η Tauri	8	37.4	39.7	40.8	51.6	52.6	54.0	55.4	56.3	6.5	7.8	10.0	38 53.82	+ 0.07	30.75	3 39 24.64	— 14.58
3	Sun I	†9	46.5	48.7	49.7	59.4	0.4	1.5	2.7	3.7	13.3	14.7	16.6	47 1.56	0.13	30.50	10 47 32.19	. .
	Sun II	10	54.9	56.8	58.2	7.9	9.1	10.3	11.4	12.4	22.1	23.3	25.2	49 10.15	0.13	30.50	10 49 40.78	. .
	Venus I	11	7.3	9.4	10.5	20.5	21.6	22.7	23.9	24.8	34.5	35.8	37.9	36 22.63	+ 0.11	30.46	12 36 53.20	+ 1.59
	Polaris, S. P.	†12	. .	. .	. .	. .	31.0	47.0	. .	. .	. .	. .	. .	10 9.00	— 31.43	30.45	1 10 8.02	— 126.04
	α Bootis	13	40.0	42.1	43.5	53.9	54.9	56.2	57.4	58.5	8.5	9.8	11.9	8 56.06	+ 0.17	30.42	14 9 26.65	— 10.05
4	Sun I	†14	23.7	25.8	27.1	37.0	38.0	39.0	40.3	41.3	50.7	52.0	53.9	50 38.98	0.13	30.45	10 51 9.56	. .
N.	Sun II	†15	32.4	34.4	35.5	45.4	46.4	47.7	48.8	49.7	59.3	0.5	2.5	52 47.51	0.13	30.45	10 53 18.09	. .
Y.	Mercury I	†16	17.4	19.3	20.7	30.4	31.5	32.6	33.7	34.8	44.1	45.5	47.5	19 32.50	+ 0.12	30.58	12 20 3.20	+ 0.20
	Venus I	17	. .	. .	. .	. .	. .	. .	6.2	8.5	9.8	10.9	12.5	37 9.58	— 33.91	30.58	12 37 6.25	+ 1.62
	Polaris, S. P.	18	. .	. .	. .	12.0	30.0	45.0	56.0	18.0	. .	. .	. .	9 44.20	— 5.75	30.58	1 10 9.03	— 126.69
	α Virginis	19	14.9	17.0	18.3	28.1	29.1	30.3	31.5	32.5	42.1	43.3	45.5	17 30.24	+ 0.11	30.58	13 18 0.93	11.64
	α Bootis	20	40.0	42.1	43.5	53.7	54.8	56.0	57.5	58.4	8.7	9.9	11.9	8 56.05	0.16	30.59	14 9 26.80	10.04
	Weisse 1430	21	2.5	4.6	5.8	15.5	16.6	17.7	18.9	19.9	29.7	30.8	32.7	56 17.70	0.14	30.61	18 56 48.45	13.77
	Weisse 1449	22	. .	. .	. .	51.9	53.0	54.1	55.2	56.3	. .	. .	. .	56 54.10	0.09	30.61	18 57 24.80	13.78
	* — 0° 54′	23	. .	. .	. .	38.4	39.5	40.5	41.8	42.8	. .	. .	. .	59 40.60	+ 0.07	30.61	19 0 11.28	13.79
	O. Arg. N. 18967	24	. .	. .	. .	33.7	37.0	40.2	44.0	46.3	. .	. .	. .	2 40.24	— 0.06	30.61	19 3 10.79	0.97
	O. Arg. N. 18980	25	. .	. .	. .	11.4	14.4	17.8	21.5	24.0	. .	. .	. .	3 17.82	0.14	30.61	19 3 48.29	1.08
	B. A. C. 6576	26	. .	. .	. .	43.5	44.8	46.0	47.4	48.5	. .	. .	. .	6 46.04	+ 0.15	30.61	19 7 16.80	15.38
	ω Aquilæ	27	40.7	42.8	44.0	53.9	54.9	56.0	57.3	58.3	8.0	9.3	11.2	10 56.04	+ 0.10	30.61	19 11 26.75	12.06
	Dorpat 2497, (1st *)	28	. .	. .	. .	1.3	2.4	4.5	19.5	21.8	23.0	24.1	25.6	13 15.28	— 25.68	30.61	19 13 20.21	12.58
	Dorpat 2497, (2d *)	29	. .	. .	. .	47.4	48.5	49.7	50.9	51.8	. .	. .	. .	12 49.66	0.06	30.61	19 13 20.33	12.58
	O. Arg. S. 19516	30	. .	. .	. .	55.3	56.5	57.7	59.0	0.1	. .	. .	. .	16 57.72	0.15	30.61	19 17 28.48	15.59
	O. Arg. S. 19551	31	. .	. .	. .	29.9	31.2	32.4	33.7	34.9	. .	. .	. .	18 32.42	0.15	30.61	19 19 3.18	15.58
	* — 26° 7′	32	15.6	18.0	19.1	. .	. .	. .	. .	. .	45.4	46.7	48.9	18 32.28	0.24	30.61	19 19 3.13	15.58
	O. Arg. S. 19587	33	41.6	43.7	44.9	56.0	57.2	58.5	59.8	1.0	11.5	12.6	14.9	19 58.32	0.20	30.61	19 20 29.13	15.58
	O. Arg. S. 19591	34	22.6	24.0	25.5	26.8	29.4	. .	36.4	39.0	40.4	41.5	42.3	20 2.79	0.48	30.61	19 20 33.88	15.58
	O. Arg. S. 19709	35	13.4	15.8	17.1	. .	. .	. .	. .	. .	43.6	45.3	47.2	25 30.40	0.25	30.61	19 26 1.26	15.74
	O. Arg. S. 19713	36	21.6	23.8	25.3	. .	. .	. .	. .	. .	51.7	53.1	55.2	25 38.45	0.25	30.61	19 26 9.31	15.74
	κ Aquilæ	37	49.2	51.2	52.5	2.2	3.2	4.5	5.6	6.8	16.2	17.5	19.5	29 4.40	0.14	30.61	19 29 35.15	13.74
	Lacaille 8186	38	. .	. .	. .	38.5	39.8	41.4	42.9	44.1	. .	. .	. .	32 41.34	+ 0.20	30.61	19 33 12.15	16.96
	Lacaille 8197	39	. .	. .	. .	48.3	50.0	52.6	12.5	15.6	17.1	18.7	20.8	35 6.95	— 34.22	30.61	19 35 3.34	17.73
	Lacaille 8209	40	2.1	5.0	6.7	19.9	21.2	23.0	24.6	26.0	39.0	40.7	43.4	37 12.87	+ 0.30	30.61	19 37 53.78	8.94
	B. A. C. 6778	41	24.9	28.0	29.5	42.5	44.0	45.6	47.0	48.5	1.3	2.9	5.8	40 45.46	0.29	30.61	19 41 16.36	17.75
	Lacaille 8237	42	. .	. .	. .	28.5	29.9	31.5	33.1	34.6	. .	. .	. .	41 31.52	0.23	30.61	19 42 2.36	17.78
	ι Sagittarii	43	2.2	5.0	6.5	19.5	20.9	22.5	24.1	25.4	38.3	40.0	42.6	45 22.45	0.29	30.61	19 45 53.35	17.73
	Lacaille 8278	44	26.1	28.6	30.1	42.1	43.4	45.0	46.4	47.6	59.6	1.2	3.6	48 44.88	0.26	30.61	19 49 15.75	16.92
	Lacaille 8326	45	. .	. .	. .	49.2	50.5	52.0	53.5	54.6	. .	. .	. .	55 51.96	+ 0.20	30.61	19 56 22.77	— 16.84
	λ Ursæ Minoris	46	. .	. .	. .	40.0	31.5	37.0	43.0	30.0	. .	. .	. .	0 36.30	— 3.22	30.62	20 1 3.70	+ 169.66
	Lacaille 8385	47	43.4	46.1	47.5	59.5	0.9	2.4	3.9	5.1	17.1	18.7	21.0	7 2.33	+ 0.25	30.62	20 7 33.20	— 16.80
	Lacaille 8404	48	43.0	45.5	46.9	58.7	0.2	1.4	2.9	4.2	15.8	17.2	19.6	11 1.40	0.25	30.62	20 11 32.27	16.54
	Lacaille 8421	49	12.4	15.2	16.6	28.6	29.7	31.3	32.7	33.9	45.6	47.1	49.6	14 31.15	0.25	30.62	20 15 2.02	16.59
	B. A. C. 7021	50	49.0	51.4	52.7	3.5	4.7	6.0	7.4	8.4	19.1	20.4	22.6	17 5.93	0.20	30.62	20 17 36.75	15.59
	ρ Capricorni	51	20.3	22.5	23.8	33.9	34.9	36.1	37.5	38.6	48.5	49.9	52.1	20 36.19	+ 0.17	30.62	20 21 6.98	14.72
	Lacaille 8476	52	. .	. .	. .	43.5	44.8	46.1	47.4	48.5	59.7	1.2	3.5	23 51.83	— 5.64	30.62	20 24 16.81	16.06
	Lacaille 8487	53	14.4	17.0	18.4	30.9	32.1	33.7	35.3	36.5	48.6	50.4	52.7	25 33.64	+ 0.27	30.62	20 26 4.53	16.90
	Lacaille 8497	54	49.4	52.3	53.7	6.7	8.0	9.7	11.3	12.6	25.3	26.9	29.7	28 9.60	+ 0.29	+30.62	20 28 40.51	— 17.34

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 3, 14.2	+ 30.42	— 0.025	+ 0.124
4, 23.0	+ 30.63	+ 0.005	+ 0.124

9. Unsteady.
12. Extremely faint.
14–15. Both limbs undulating.
16. Faint.

September 3, ... n. = + 0.109 s.
4, 10h. to 15h. + 0.066.
4, 18h. to 6h. — 0.138.

September 4, 21h. 55m. Image 0.00 r. Clamp west.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1830.0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
4	Lacaille 8512	1	. .	. .	. .	14.9	16.4	18.0	19.6	20.8	. .	. .	. .	31 17.94	+ 0.24	+30.62	20 31 48.80	− 9.95
	B. A. C. 7155	2	8.6	11.2	12.7	25.4	26.8	28.3	29.9	31.1	43.5	45.2	47.8	33 28.23	0.28	30.62	20 33 59.13	17.05
	Lacaille 8540	3	13.0	15.6	16.9	29.0	30.2	31.8	33.2	34.3	46.2	47.9	50.1	35 31.65	0.25	30.62	20 36 2.52	16.54
	Lacaille 8559	4	38.5	41.2	42.9	56.1	57.8	59.4	1.0	2.4	15.5	17.1	20.1	38 59.27	0.30	30.62	20 39 30.19	17.50
	Lacaille 8586	5	. .	56.9	58.7	11.5	12.8	14.3	16.0	17.5	30.2	32.0	. .	42 14.43	0.27	30.62	20 42 45.32	17.17
	Lacaille 8603	6	48.7	51.4	52.7	. .	. .	. .	. .	. .	24.3	25.7	28.3	44 8.52	0.34	30.62	20 44 39.38	17.16
	Lacaille 8620	†7	. .	51.3	52.6	. .	. .	. .	. .	. .	26.0	27.6	. .	48 9.37	0.34	30.62	20 48 40.33	17.56
	* — 43° 37′	8	. .	10.4	12.9	26.2	27.5	28.9	30.8	32.2	45.7	46.6	. .	52 28.96	0.29	30.62	20 52 59.87	17.51
	A Capricorni	9	23.7	26.0	27.2	38.0	39.1	40.4	41.7	42.9	53.4	54.7	57.0	58 40.37	0.20	30.62	20 59 11.19	15.26
	Lacaille 8707	10	8.4	10.9	12.2	23.3	24.6	25.8	27.2	28.4	39.4	40.9	43.1	1 25.84	0.22	30.62	21 1 56.68	15.67
	ζ Cygni	11	22.3	24.6	25.9	37.1	38.3	39.6	41.0	42.1	53.0	54.6	56.9	6 39.58	+ 0.08	30.62	21 7 10.28	11.62
	β Cephei	12	43.4	49.1	52.5	20.4	23.9	27.1	30.7	33.4	1.3	5.3	10.4	26 27.05	− 0.02	30.62	21 26 57.65	7.23
	Lacaille 8862	13	36.6	38.9	40.3	51.5	52.8	54.1	55.5	56.5	7.5	9.0	11.3	29 54.00	+ 0.22	30.62	21 30 24.84	15.43
	* — 33° 8′	14	44.8	47.3	48.6	0.1	1.4	2.8	4.3	5.4	16.7	18.2	20.6	33 2.75	0.24	30.62	21 33 33.61	15.65
	Lacaille 8889	15	. .	. .	. .	34.4	35.5	37.0	38.3	39.5	. .	. .	. .	33 36.94	0.18	30.62	21 34 7.74	15.65
	ε Pegasi	16	45.5	47.6	48.9	58.5	59.6	1.0	2.2	3.1	12.7	14.0	15.9	37 0.82	0.10	30.62	21 37 31.54	13.03
	Lacaille 8918	17	2.2	4.5	5.8	17.0	18.1	19.3	20.7	21.9	32.6	34.1	36.3	39 19.32	0.21	30.62	21 39 50.15	15.19
	Lacaille 8934	18	16.0	18.3	19.7	30.7	31.9	33.1	34.5	35.6	46.4	47 8	50.0	41 33.09	0.21	30.62	21 42 3.92	15.15
	μ Capricorni	19	7.5	9.7	10.9	20.8	21.9	23.1	24.2	25.3	35.1	36.3	38.4	45 23.02	0.16	30.62	21 45 53.80	14.31
	o^1 Eridani	20	28.2	30.1	31.3	40.9	41.9	43.0	44.2	45.2	54.9	56.2	58.2	4 43.10	0.14	30.66	4 5 13.90	11.88
	Bessel Zone 330, 7	21	18.2	20.1	21.3	31.6	32.9	33.9	35.2	36.1	45.9	47.3	49.2	8 33.79	0.09	30.66	4 9 4.54	13.84
	B. A. C. 1334	22	1.9	3.9	5.3	15.8	16.9	18.2	19.5	20.6	31.0	32.6	34.5	12 18.20	0.19	30.66	4 12 49.05	10.36
	B. A. C. 1355	23	5.1	7.5	8.8	19.4	20.6	22.0	23.4	24.4	35.0	36.5	38.7	15 21.95	0.20	30 66	4 15 52.81	10.04
	ε Tauri	24	54.1	56.4	57.6	7.8	8.9	10.3	11.5	12.4	22.6	23.9	25.8	20 10.12	0.08	30.66	4 20 40.86	14.13
	α Tauri	25	20.9	23.1	24.2	34.3	35.4	36.6	37.8	38.9	48.8	50.1	52.2	27 36.57	0.09	30.66	4 28 7.32	13.83
	τ Tauri	26	18.3	20.5	21.7	32.3	33.3	34.6	35.9	37.0	47.2	48.5	50.6	33 34.54	0.08	30.66	4 34 5.28	14.45
	μ Eridani	27	56.4	58.6	59.8	9.3	10.3	11.4	12.5	13.5	23.3	24.4	26.3	38 11.44	0.13	30.66	4 38 42.23	12.01
	i Tauri	28	38.7	40.8	42.0	52.3	53.3	54.4	55.8	56.8	6.9	8.3	10.2	42 54.49	0.08	30.66	4 43 25.23	14.00
	ι Aurigæ	†29	19.9	22.3	23.8	34.9	36.2	37.6	39.1	40.4	51.6	53.1	55.4	47 37.66	0.06	30.66	4 48 8.38	15.59
	ι Tauri	30	. .	13.3	14.6	24.9	26.1	27.5	28.7	29.8	40.0	41.2	. .	54 27.34	0.07	30.66	4 54 58.07	14.24
	Moon II	91	35.1	37.2	38.6	49.0	50.2	51.6	53.0	54.1	4.4	5.7	8.2	4 51.55	0.08	30.66	5 5 22.29	. .
	δ Orionis	32	17.6	19.6	20.8	30.5	31.4	32.6	33.8	34.9	44.4	45.6	47.5	24 32.61	0.12	30.66	5 25 3.39	12.01
	ζ Tauri	33	44.1	46.2	. .	57.8	59.0	0.2	1.3	2.5	. .	14.0	16.0	29 0.12	+ 0.06	30.66	5 29 30.84	14.05
	α Leonis	34	. .	. .	. .	. .	. .	. .	6.2	8.6	9.9	11.2	12.5	1 9.68	− 33.82	30.47	10 1 6.33	− 11.48
5	Sun I	35	0.4	2.5	3.7	13.6	14.5	15.7	16.9	17.9	27.6	28.7	31.0	54 15.68	+ 0.13	30.47	10 54 46.28	. .
	Sun II	36	8.9	11.0	12.2	21.9	23.0	24.2	25.4	26.3	36.0	37.2	39.1	56 24.11	0.13	30.47	10 56 54.71	. .
	Mercury I	37	55.7	57.9	. .	8.6	9.7	11.0	12.3	13.2	. .	23.9	26.1	24 10.93	0.10	30.47	12 24 41.50	+ 0.20
	Venus I	†38	26.0	27.9	29.2	39.2	40.1	41.2	42.3	43.5	53.0	54.2	56.4	36 41.18	+ 0.11	30.47	12 37 11.76	+ 1.64
	Polaris, S. P.	†39	. .	. .	. .	19.0	34.0	46.0	56.0	17.0	. .	. .	. .	9 46.40	− 7.22	30.47	1 10 9.65	− 127.31
	α Virginis	40	14.9	17.1	18.2	28.2	29.1	30.3	31.5	32.6	42.1	43.4	45.5	17 30.26	+ 0.11	30.47	13 18 0.84	11.63
	α Bootis	41	40.0	42.3	43.5	53.7	54.9	56.1	57.4	58.4	8.5	9.9	11.9	8 56.05	+ 0.17	30.47	14 9 26.69	10.02
	Weisse 1301	42	. .	. .	. .	34.1	35.4	37.5	52.5	54.8	56.0	57.2	58.5	51 48.25	− 25.83	30.46	18 51 52.88	13.70
	Dorpat 2425 (1st *)	43	. .	. .	. .	38.3	39.3	40.5	41.8	42.7	. .	. .	. .	52 40.52	+ 0.07	30.46	18 53 11.05	13.70
	Dorpat 2425 (2d *)	44	25.3	27.4	28.5	. .	. .	. .	. .	. .	52.5	53.8	55.6	52 40.52	0.16	30.46	18 53 11.14	13.70
	Dorpat 2434 (1st *)	45	59.2	1.1	2.4	. .	. .	. .	. .	. .	26.0	27.2	29.1	55 14.17	0.16	30.46	18 55 44.79	13.03
	Dorpat 2434 (2d *)	46	. .	. .	. .	13.1	14.2	15.4	16.5	17.6	. .	. .	. .	55 15.36	0.07	30.46	18 55 45.89	13.03
	Dorpat 2447 (1st *)	47	47.5	49.5	50.6	. .	. .	. .	. .	. .	14.2	16.0	17.5	59 2.55	0.16	30.46	18 59 33.17	13.10
	Dorpat 2447 (2d *)	48	. .	. .	. .	0.6	1.6	2.8	4.0	5.0	. .	. .	. .	59 2.80	0.07	30.46	18 59 33.33	13.10
	B. A. C. 6562	49	4.4	6.6	7.8	18.5	19.7	21.1	22.3	23.5	34.1	35.5	37.6	4 21.01	0.13	30.46	19 4 51.60	15.56
	B. A. C. 6576	50	29.6	31.7	33.0	43.6	44.9	46.1	47.4	48.5	58.9	0.3	2.4	6 46.04	0.13	30.46	19 7 16.63	15.36
	ω Aquilæ	51	40.7	42.7	44.0	53.8	55.0	56.2	57.3	58.3	8.1	9.3	11.4	10 56.09	0.13	30.46	19 11 26.66	12.04
	Weisse 277	52	35.4	37.6	38.7	48.7	49.7	50.8	52.0	53.0	2.8	4.1	6.0	11 50.80	0.13	30.46	19 12 21.39	12.04
	Dorpat 2501 (1st *)	53	5.9	8.0	9.3	. .	. .	. .	. .	. .	32.9	34.2	36.0	14 21.05	0.16	30.46	19 14 51.67	13.47
	Dorpat 2501 (2d *)	54	. .	. .	. .	19.4	20.6	21.7	22.9	23.9	. .	. .	. .	14 21.70	0.07	30.46	19 14 52.23	13.47
	* — 26° 10′	55	15.7	18.0	19.3	30.0	31.1	32.5	33.8	34.9	45.4	46.9	48.9	18 32.41	+ 0.13	+30.46	19 19 3.00	− 15.57

7. Faint.
29. Unsteady.
38. Very tremulous.
39. Unsteady.

September 5, 20h. 35m. Image east $0^{r}.08$. Clamp west.

September 5, 10h. to 14h. n. = $+0^{s}.102$.
5, 18h. to 7h. $+0^{s}.014$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 5, 21.4	+ 30.46	+ 0.001	+ 0.124

s.
15.55
16.5[illegible]
14.01
16.94
15.75
15.36
12.69
17.4[illegible]
15.91
102.50
15.50
14.30
14.30
15.90
15.97
15.15
15.12
15.12
12.53
14.99
12.04
14.1[illegible]
12.66
[illegible]
14.03
14.01
14.10
12.69
14.05
14.04
13.30
9.99
15.21
15.21
16.00
15.50
12.22
12.22
15.45
15.45
12.[illegible]
15.9[illegible]
12.43
12.43
12.27
14.99
14.66
15.21
17.12
172.77
15.64
17.10
15.43
15.55

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
t. 7	B. A. C. 7026 . .	1	24. 9	27. 2	28. 5	39. 6	40. 8	42. 2	43. 6	44. 7	55. 6	57. 0	59. 3	17 42. 13	+ 0. 13	+30. 50	20 18 12. 76	— 15. 82
	B. A. C. 7039 . .	2	38. 1	40. 4	41. 6	52. 2	53. 4	54. 7	56. 0	57. 1	7. 6	8. 9	11. 2	19 54. 65	+ 0. 13	30. 50	20 20 25. 28	15. 30
	B. A. C. 7040 . .	3	. .	. .	. .	23. 3	24. 8	27. 0	43. 4	45. 9	47. 1	48. 3	50. 0	20 38. 72	— 28. 07	30. 50	20 20 41. 15	15. 29
r.	Lacaille 8476 . .	4	. .	. .	. .	43. 4	44. 7	46. 1	47. 7	48. 7	. .	. .	. .	23 46. 12	+ 0. 09	30. 50	20 24 16. 71	16. 05
	ε Delphini . . .	5	58. 0	0. 2	1. 3	11. 0	12. 1	13. 4	14. 5	15. 5	25. 3	26. 5	28. 5	26 13. 30	0. 13	30. 50	20 26 43. 93	12. 51
	B. A. C. 7113 . .	6	15. 5	17. 7	18. 9	29. 5	30. 7	32. 0	33. 4	34. 4	45. 0	46. 3	48. 5	29 31. 99	0. 13	30. 50	20 30 2. 62	15. 28
	B. A. C. 7128 . .	7	19. 7	21. 9	23. 2	33. 7	34. 9	36. 3	37. 5	38. 6	49. 0	50. 3	52. 5	31 36. 15	0. 13	30. 50	20 32 6. 78	15. 24
	Lacaille 8537 . .	8	11. 8	14. 2	15. 6	26. 6	27. 9	29. 2	30. 7	31. 9	42. 8	44. 3	46. 5	34 29. 23	+ 0. 13	30. 50	20 34 59. 86	15. 78
	B. A. C. 7170 . .	9	. .	. .	. .	46. 5	48. 0	50. 2	7. 1	9. 6	10. 9	12. 3	13. 9	37 2. 31	— 28. 75	30. 50	20 37 4. 06	15. 55
	O. Arg. S. 20828 .	10	43. 9	46. 2	47. 3	. .	. .	. .	. .	. .	14. 0	15. 5	17. 7	38 0. 77	+ 0. 17	30. 50	20 38 31. 44	15. 54
	O. Arg. S. 20833 .	11	. .	. .	. .	3. 4	4. 6	5. 9	7. 4	8. 4	. .	. .	. .	38 5. 94	+ 0. 08	30. 50	20 38 36. 52	15. 34
	B. A. C. 7210 . .	12	. .	. .	. .	. .	. .	. .	0. 0	2. 6	4. 0	5. 3	6. 9	42 3. 76	— 37. 34	30. 51	20 41 56. 93	15. 53
	B. A. C. 7237 . .	13	16. 2	18. 3	19. 6	30. 3	31. 5	32. 8	34. 0	35. 2	45. 6	46. 8	49. 2	44 32. 68	+ 0. 13	30. 51	20 45 3. 32	15. 19
	Lacaille 8619 . .	14	16. 1	17. 7	19. 2	20. 7	23. 5	. .	34. 6	37. 2	38. 5	40. 0	41. 7	46 58. 92	0. 44	30. 51	20 47 29. 27	15. 93
	* — 32° 2′ . . .	15	46. 3	48. 8	50. 1	1. 6	2. 7	4. 0	5. 5	6. 6	17. 9	19. 5	21. 8	47 4. 07	0. 14	30. 51	20 47 34. 72	15. 93
	Lacaille 8640 . .	16	38. 2	39. 6	41. 2	42. 4	45. 4	. .	55. 0	57. 7	59. 0	0. 3	2. 0	52 20. 08	0. 43	30. 51	20 52 51. 02	15. 71
	O. Arg. S. 21030 .	17	6. 1	8. 4	9. 8	21. 0	22. 2	23. 6	24. 9	26. 0	37. 2	38. 6	40. 7	52 23. 50	+ 0. 14	30. 51	20 52 54. 15	15. 72
	Lacaille 8660 . .	18	. .	. .	. .	. .	. .	. .	7. 6	10. 1	11. 5	12. 9	14. 4	55 11. 30	— 37. 51	30. 51	20 55 4. 30	15. 50
	2 Piscis Australis .	19	17. 8	20. 3	21. 7	33. 1	34. 3	35. 7	37. 3	38. 5	49. 8	51. 2	53. 6	57 35. 75	+ 0. 14	30. 51	20 58 6. 40	15. 95
	61^1 Cygni	20	59. 7	2. 4	3. 8	16. 1	17. 5	18. 9	20. 4	21. 6	33. 8	35. 4	37. 8	0 18. 85	0. 15	30. 51	21 0 49. 51	12. 14
	3 Piscis Australis .	21	26. 7	29. 0	30. 1	41. 0	42. 3	43. 6	45. 0	46. 1	56. 8	58. 1	0. 5	4 43. 56	0. 13	30. 51	21 5 14. 20	15. 44
	ζ Cygni	22	22. 2	24. 6	25. 9	37. 1	38. 4	39. 7	41. 1	42. 1	53. 1	54. 5	56. 7	6 39. 58	0. 15	30. 52	21 7 10. 25	11. 60
	Lacaille 8776 . .	23	4. 6	7. 0	8. 2	19. 2	20. 4	21. 7	23. 0	24. 3	34. 8	36. 4	38. 5	11 21. 65	0. 13	30. 52	21 11 52. 30	15. 35
	Lacaille 8790 . .	24	48. 6	51. 0	52. 3	3. 5	4. 7	6. 0	7. 4	8. 6	19. 4	21. 0	23. 3	14 5. 98	0. 14	30. 52	21 14 36. 64	15. 54
	B. A. C. 7436 . .	25	12. 7	14. 8	16. 1	26. 7	27. 9	29. 0	30. 3	31. 4	41. 9	43. 3	45. 5	17 29. 05	0. 13	30. 52	21 17 59. 70	15. 04
	5 Piscis Australis .	26	8. 5	10. 9	12. 2	23. 6	24. 9	26. 2	27. 7	28. 8	40. 0	41. 4	43. 8	20 26. 18	0. 14	30. 52	21 20 56. 84	15. 65
	β Cephei	27	42. 9	48. 7	52. 0	20. 3	23. 4	26. 9	30. 3	33. 1	0. 8	4. 6	10. 2	26 26. 65	0. 40	30. 52	21 26 57. 57	7. 18
	ξ Aquarii	28	45. 8	48. 0	49. 1	58. 9	59. 9	1. 1	2. 3	3. 3	12. 9	14. 1	16. 1	30 1. 05	0. 12	30. 52	21 30 31. 69	13. 95
	O. Arg. S. 21575 .	29	31. 6	33. 9	35. 3	46. 2	47. 4	48. 6	50. 0	51. 3	2. 0	3. 3	5. 5	33 48. 65	0. 13	30. 52	21 34 19. 30	15. 21
	Lacaille 8902 . .	30	59. 3	1. 5	2. 8	13. 5	14. 6	15. 9	17. 3	18. 4	28. 9	30. 1	32. 4	36 15. 88	0. 13	30. 53	21 36 46. 54	15. 00
	Lacaille 8918 . .	31	2. 5	4. 8	6. 0	17. 1	18. 3	19. 6	21. 0	22. 1	32. 9	34. 3	36. 6	39 19. 56	0. 13	30. 53	21 39 50. 22	15. 19
	Lacaille 8937 . .	32	8. 0	10. 3	11. 6	22. 5	23. 8	25. 1	26. 4	27. 6	38. 4	39. 7	41. 9	42 25. 03	0. 13	30. 53	21 42 55. 69	15. 18
	Lacaille 8947 . .	33	.	. .	. .	7. 6	8. 8	10. 1	11. 3	12. 5	.	.	. .	44 10. 06	0. 08	30. 53	21 44 40. 67	15. 11
	Lacaille 8965 . .	34	12. 3	14. 7	16. 1	27. 4	28. 6	29. 8	31. 3	32. 4	43. 5	45. 0	47. 5	47 29. 87	0. 14	30. 53	21 48 0. 54	15. 33
	B. A. C. 7652 . .	35	52. 8	55. 0	56. 3	6. 9	8. 0	9. 3	10. 4	11. 5	21. 9	23. 2	25. 3	51 9. 15	0. 13	30. 53	21 51 39. 81	14. 75
	Lacaille 9000 . .	36	49. 3	51. 8	53. 2	4. 7	6. 0	7. 3	8. 7	9. 8	21. 3	22. 7	25. 0	54 7. 25	0. 14	30. 53	21 54 37. 92	15. 39
	α Aquarii	37	3. 3	5. 4	6. 6	16. 3	17. 3	18. 5	19. 7	20. 7	30. 1	31. 4	33. 4	58 18. 43	0. 12	30. 53	21 58 49. 08	13. 56
	B. A. C. 7715 . .	38	27. 9	30. 1	31. 6	42. 6	43. 8	45. 1	46. 5	47. 7	58. 5	0. 0	2. 3	1 45. 10	0. 13	30. 54	22 2 15. 77	15. 02
	Lacaille 9058 . .	39	30. 9	33. 2	34. 6	45. 4	46. 5	47. 9	49. 2	50. 4	1. 0	2. 4	4. 6	4 47. 83	0. 13	30. 54	22 5 18. 50	14. 86
	θ Aquarii	40	54. 7	56. 7	57. 9	7. 7	8. 8	10. 0	11. 2	12. 2	21. 7	23. 0	24. 9	9 9. 89	0. 12	30. 54	22 9 40. 55	13. 90
8	Sun I	†41	49. 9	52. 0	53. 3	2. 8	3. 9	5. 1	6. 2	7. 4	17. 1	18. 3	20. 2	5 5. 11	0. 11	. .	. . . .	. .
	Sun II	†42	58. 2	0. 2	1. 5	11. 2	12. 1	13. 3	14. 5	15. 7	25. 3	26. 4	28. 5	7 13. 35	+ 0. 11	. .	. . . .	. .
9	α Leonis	43	. .	. .	. .	. .	. .	. .	6. 6	9. 1	10. 3	11. 7	13. 1	1 10. 16	. .	. .	. . . .	11. 53
	β Aquilæ	44	. .	. .	. .	19. 6	20. 9	23. 0	37. 8	40. 1	41. 4	42. 5	44. 0	48 33. 66	— 25. 71	30. 86	19 48 38. 81	12. 65
	ε Sagittarii . . .	45	30. 3	32. 6	33. 8	44. 9	46. 1	47. 5	48. 8	50. 0	0. 6	2. 0	4. 3	53 47. 35	+ 0. 21	30. 86	19 54 18. 42	15. 71
	B. A. C. 6887 . .	46	5. 7	8. 1	9. 4	20. 6	21. 7	23. 0	24. 4	25. 5	36. 4	37. 9	40. 0	56 22. 97	+ 0. 22	30. 86	19 56 54. 05	— 15. 86
	λ Ursæ Minoris . .	47	. .	. .	. .	32. 5	28. 5	33. 0	36. 0	24. 5	. .	. .	. .	0 30. 90	— 3. 31	30. 87	20 0 58. 46	+ 174. 91
	B. A. C. 6947 . .	48	1. 1	3. 3	4. 6	15. 4	16. 7	18. 0	19. 4	20. 6	31. 2	32. 6	35. 0	6 17. 99	+ 0. 21	30. 87	20 6 49. 07	— 15. 61
	α^2 Capricorni . .	49	44. 8	46. 9	48. 0	58. 1	59. 2	0. 4	1. 5	2. 5	12. 3	13. 7	15. 8	10 0. 29	0. 16	30. 87	20 10 31. 32	14. 26
	B. A. C. 7018 . .	50	19. 5	22. 0	23. 1	34. 3	35. 5	36. 8	38. 1	39. 2	50. 3	51. 6	53. 8	16 36. 75	0. 22	30. 87	20 17 7. 84	15. 76
	B. A. C. 7030 . .	51	21. 5	23. 9	25. 2	36. 2	37. 5	38. 7	40. 2	41. 2	52. 0	53. 5	55. 9	18 38. 71	0. 22	30. 87	20 19 9. 80	15. 77
	B. A. C. 7049 . .	52	45. 9	48. 2	49. 2	59. 7	1. 0	2. 3	3. 5	4. 6	15. 0	16. 3	18. 4	21 2. 19	0. 19	30. 87	20 21 33. 25	15. 11
	B. A. C. 7069 . .	53	29. 2	31. 3	32. 6	. .	. .	. .	. .	. .	58. 1	59. 4	1. 5	23 45. 35	0. 23	30. 87	20 24 16. 45	15. 08
	B. A. C. 7070 . .	54	. .	. .	. .	45. 2	46. 3	47. 6	48. 8	50. 0	. .	. .	. .	23 47. 58	+ 0. 14	+30. 87	20 24 18. 59	— 15. 08

41-42. No data for reduction.

September 9, 19h. 20m. Image west $0^{r}.17$. Clamp east.
Image east $0^{r}.07$. Clamp west.

September 9. n. = — $0^{s}.140$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 9, 21.0	+ 30.89	+ 0.025	+ 0.124

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 21	Weisse 1058 .	1	. .	. .	. .	13.1	14.3	16.4	31.5	34.2	35.4	36.6	37.9	42 27.42	− 26.34	+24.64	18 42 25.72	− 13.19
	O. Arg. S. 18802 .	2	13.6	15.8	17.2	28.1	29.2	30.5	31.9	33.0	43.8	45.3	47.5	45 30.54	0.20	24.64	18 45 54.98	15.45
	θ Serpentis, (1st *) .	3	48.3	50.4	51.6	1.2	2.2	3.4	4.6	5.5	15.1	16.5	18.4	49 3.38	0.17	24.64	18 49 27.85	12.29
Y.	θ Serpentis, (2d *) .	4	28.8	30.3	31.4	32.6	34.9	. .	35.1	37.5	38.6	40.0	41.3	49 5.05	0.42	24.64	18 49 29.27	12.29
	Dorpat 2425, (1st *)	5	9.9	11.4	12.5	13.8	16.1	. .	16.7	19.2	20.4	21.8	23.1	52 46.49	0.43	24.64	18 53 10.70	13.44
	Dorpat 2425, (2d *)	6	31.3	33.3	34.6	44.0	45.1	46.3	47.4	48.5	58.4	59.5	1.6	52 46.36	0.18	24.64	18 53 10.82	13.44
	Dorpat 2434 (1st *)	7	. .	. .	. .	. .	. .	. .	50.3	52.7	53.9	55.3	56.6	55 53.76	33.91	24.64	18 55 44.49	12.78
	Dorpat 2447, (1st *)	†8	53.6	55.3	56.5	6.1	7.1	8.1	9.4	10.4	20.0	21.0	23.1	59 8.25	0.17	24.63	18 59 32.71	12.85
	Dorpat 2447 (2d *)	9	32.7	34.2	35.3	36.4	38.7	. .	38.7	41.2	42.4	43.7	45.0	59 8.83	0.42	24.63	18 59 33.04	12.85
	B. A. C. 6565 . .	10	49.3	51.5	52.8	3.6	4.8	6.2	7.4	8.5	19.4	20.7	23.0	5 6.11	0.20	24.63	19 5 30.54	15.40
	d Sagittarii	11	0.7	2.8	4.1	14.3	15.3	16.5	17.7	18.8	29.1	30.4	32.5	9 16.56	0.19	24.63	19 9 41.00	14.56
	Moon I	12	19.1	21.3	22.6	32.9	34.0	35.3	36.5	37.8	48.4	49.5	51.8	12 35.38	0.19	24.63	19 12 59.82	. .
	ρ^1 Sagittarii	13	. .	. .	. .	35.4	36.7	38.8	54.7	57.4	58.6	59.9	1.3	13 50.35	27.56	24.63	19 13 47.42	− 14.46
	λ Ursæ Minoris . .	14	. .	. .	. .	. .	13.0	17.0	18.0	12.0	. .	. .	.	0 45.00	− 23.44	24.61	20 0 46.17	+ 187.45
R.	α Ursæ Majoris . .	†15	18.3	22.8	25.4	45.8	58.5	51.2	53.6	55.8	16.7	19.0	23.3	54 50.95	+ 0.22	24.12	10 55 15.29	− 12.08
22	Sun I	16	. .	. .	. .	. .	. .	. .	59.6	1.7	2.9	4.3	5.5	57 2.80	− 33.10	24.12	11 56 53.82	. .
	Sun II	17	22.5	24.4	25.7	35.5	36.5	37.6	39.1	40.0	49.3	50.7	52.5	58 37.62	+ 0.14	24.12	11 59 1.88	. .
	Venus I	†18	7.5	9.2	10.4	20.3	21.4	22.7	24.1	25.0	34.3	35.8	37.8	18 22.59	0.15	24.12	12 18 46.86	+ 2.02
Y.	Polaris, S. P. . .	†19	. .	. .	. .	25.0	. .	55.0	5.0	28.0	. .	. .	. .	9 43.25	9.98	24.12	1 10 17.35	− 134.82
	α Bootis	20	46.2	48.3	49.6	59.7	1.1	2.3	3.4	4.6	14.5	16.1	18.2	9 2.18	0.13	24.12	14 9 26.43	9.83
	c Sagittarii	21	36.9	39.3	40.5	51.3	52.7	54.0	55.4	56.5	7.1	8.6	10.9	53 53.93	0.18	24.12	19 54 18.23	15.51
	B. A. C. 6947 . .	22	. .	. .	. .	22.0	23.0	24.2	25.6	26.9	. .	. .	. .	6 24.34	0.13	24.12	20 6 48.59	15.43
	α^2 Capricorni	23	51.4	53.6	54.8	4.8	6.0	7.1	8.1	9.2	18.8	20.1	21.9	10 6.89	0.15	24.12	20 10 31.16	14.10
	Moon I	24	20.2	21.9	23.3	33.8	34.8	36.0	37.1	38.1	48.2	50.2	52.0	13 35.96	0.16	24.12	20 14 0.24	. .
	ρ Capricorni	25	26.7	28.9	30.2	40.3	41.4	42.5	43.6	44.6	55.0	56.3	58.2	20 42.52	+ 0.16	24.12	20 21 6.80	− 14.52
	λ Ursæ Minoris . .	26	. .	. .	. .	. .	. .	. .	27.0	23.0	28.0	27.0	48.0	29 18.60	− 28 57.68	24.12	20 0 45.04	+ 188.70
	Ψ Capricorni	27	21.8	24.1	25.6	36.4	37.4	38.8	40.1	41.2	52.0	53.1	55.3	37 38.71	+ 0.17	24.12	20 38 3.00	− 15.18
	ω Capricorni	28	. .	. .	. .	15.9	17.1	18.5	19.9	21.1	. .	. .	. .	43 18.50	0.13	24.12	20 43 42.75	15.32
	B. A. C. 7252 . .	29	. .	4.3	5.5	16.3	17.4	18.7	20.0	21.3	32.0	33.2	. .	48 18.74	0.16	24.12	20 48 43.02	15.25
	Lacaille 8647 . .	30	45.0	47.6	48.9	59.6	0.9	2.2	3.4	4.4	15.4	16.9	19.0	53 2.12	0.18	24.12	20 53 26.42	15.37
	B. A. C. 7327 (2d *)	31	30.1	32.2	33.4	43.8	. .	46.2	47.4	48.7	59.3	0.6	2.7	58 46.44	0.05	24.12	20 59 10.61	14.93
	B. A. C. 7347 . .	32	0.4	2.5	3.8	14.6	15.6	16.7	18.1	19.3	29.4	30.9	32.9	2 16.75	0.17	24.12	21 2 41.04	14.86
	ζ Cygni	33	28.5	30.9	32.2	43.2	44.5	45.9	47.3	48.6	59.3	0.7	3.0	6 45.83	0.14	24.12	21 7 10.09	11.44
	Lacaille 8777 . .	34	. .	. .	. .	27.9	28.9	30.1	31.7	32.8	. .	. .	. .	11 30.28	0.12	24.12	21 11 54.52	15.15
	Lacaille 8787 . .	35	. .	. .	. .	18.5	19.8	21.0	22.3	23.6	. .	. .	. .	13 21.04	0.13	24.12	21 13 45.29	15.38
	B. A. C. 7434 . .	36	14.8	16.8	18.3	28.9	30.1	31.3	32.7	33.9	44.5	45.9	48.0	17 31.38	0.17	24.12	21 17 55.67	15.03
	B. A. C. 7467 . .	37	54.4	56.6	58.1	8.3	9.8	11.3	12.4	13.5	24.0	25.3	27.7	22 11.04	0.17	24.12	21 22 35.33	15.00
	B. A. C. 7479 . .	38	. .	. .	. .	17.2	18.2	19.5	20.9	22.0	. .	. .	. .	24 19.56	0.12	24.12	21 24 43.80	14.94
	Lacaille 8863 . .	39	40.6	42.7	44.1	54.9	55.8	57.1	58.4	59.6	10.4	11.6	13.6	29 57.16	0.17	24.12	21 30 21.45	14.98
	Lacaille 8890 . .	40	18.2	20.6	22.0	32.5	33.8	35.1	36.2	37.3	48.2	49.3	52.0	33 35.02	0.17	24.12	21 33 59.31	14.93
	Lacaille 8906 . .	41	56.9	59.0	0.6	11.5	12.7	14.2	15.5	16.6	27.3	28.8	31.0	37 14.01	0.18	24.12	21 37 38.31	15.18
	Lacaille 8923 . .	42	41.8	44.0	45.1	56.0	57.1	58.3	59.9	1.0	11.5	12.9	15.0	39 58.42	0.17	24.12	21 40 22.71	14.95
	Lacaille 8937 . .	43	14.9	16.8	18.2	29.2	30.3	31.6	33.0	34.2	45.2	46.2	48.4	42 31.64	0.18	24.12	21 42 55.94	15.08
	Lacaille 8968 . .	44	36.2	38.5	39.9	50.8	51.9	53.1	54.5	55.6	6.1	7.6	10.0	48 53.11	0.18	24.12	21 49 17.41	14.93
	Lacaille 9005 . .	45	43.4	45.5	47.2	58.0	59.1	0.4	1.9	2.9	13.9	15.0	17.4	55 0.43	+ 0.18	24.12	21 55 24.73	14.93
	α Aquarii	46	. .	. .	. .	22.8	23.6	24.9	26.3	27.3	36.2	37.6	39.5	58 29.78	− 4.84	24.12	21 58 49.06	13.51
	α Leonis	47	26.9	29.2	30.5	40.3	41.4	42.6	43.8	44.8	54.4	55.7	57.8	0 42.49	+ 0.15	23.87	10 1 6.51	− 11.74
Sept. 23	Sun I	48	50.5	52.5	53.8	3.4	4.5	5.7	6.9	8.0	17.2	18.5	20.6	59 5.60	0.14	23.85	11 59 29.59	. .
	Sun II	49	58.5	0.7	1.8	11.3	12.4	13.6	14.8	15.8	25.4	26.8	28.8	1 13.63	0.14	23.85	12 1 37.62	. .
	Venus I	50	5.4	7.7	9.0	18.7	19.9	21.2	22.3	23.4	32.8	34.1	36.2	16 20.97	0.14	23.85	12 16 44.96	+ 2.04
	Polaris, S. P. . .	†51	. .	. .	. .	. .	46.0	. .	. .	30.0	. .	. .	. .	9 38.00	15.34	23.83	1 10 17.17	− 135.06
	α Bootis	52	46.5	48.6	49.9	0.1	1.3	2.5	3.8	4.9	14.9	16.3	18.3	9 2.46	0.16	23.82	14 9 26.44	9.83
	α Serpentis	53	54.5	56.5	57.8	7.5	8.5	9.7	10.9	11.9	21.5	22.7	24.8	37 9.66	0.14	23.80	15 37 33.60	11.13
	ω Aquilæ	54	47.2	49.4	50.4	0.3	1.4	2.6	3.7	4.9	14.4	15.7	17.7	11 2.54	+ 0.10	+23.75	19 11 26.39	− 11.75

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 22, 19.6	+ 24.12	0.000	+ 0.138

8. Very faint.
15. Very unsteady.
18. Very unsteady.
19. Faint and very unsteady.
51. Faint; through clouds.

September 22, ... n. = − 0.040 s.
22–23, 10h. to 16h. + 0.030.
19h. to 22h. − 0.132

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 23	χ^1 Sagittarii . . .	1	19.8	22.2	23.4	34.1	35.1	36.4	37.7	38.8	49.3	50.6	52.9	16 36.39	+ 0.21	+23.75	19 17 0.35	— 15.12
	χ^2 Sagittarii . . .	2	. .	. .	. .	55.8	57.4	59.6	16.0	18.5	19.8	21.1	22.4	17 11.32	— 28.05	23.75	19 17 7.02	15.12
	O. Arg. S. 19608 .	3	37.3	39.5	40.9	51.7	52.8	54.0	55.2	56.4	6.8	8.3	10.6	20 53.95	+ 0.22	23.75	19 21 17.92	15.27
Y.	B. A. C. 6672 . .	4	16.7	19.0	20.2	31.0	32.2	33.5	34.8	35.9	46.4	47.9	50.2	22 33.44	0.22	23.75	19 22 57.41	15.27
	* — 26° 25′ . . .	5	. .	. .	. .	6.6	7.7	8.9	10.2	11.3	. .	. .	. .	25 8.94	0.17	23.75	19 25 32.86	15.31
	* — 26° 25′ . . .	6	. .	. .	. .	34.6	35.8	37.1	38.5	39.6	. .	. .	. .	25 37.12	0.17	23.75	19 26 1.04	15.31
	* — 26° 25′ . . .	7	28.2	30.4	31.7	. .	. .	. .	. .	. .	58.3	59.5	1.9	25 45.00	0.26	23.75	19 26 9.01	15.31
	κ Aquilæ	8	55.9	58.1	59.2	8.9	9.9	11.1	12.2	13.2	23.0	24.3	26.2	29 11.09	0.15	23.75	19 29 34.99	13.47
	Lacaille 8193 . .	9	18.9	21.5	23.0	35.1	36.3	37.8	39.2	40.4	52.2	53.6	56.2	33 37.65	0.27	23.75	19 34 1,67	16.53
	* — 29° 9′ . . .	10	. .	. .	. .	4.5	5.7	7.0	8.3	9.5	. .	. .	. .	38 7.00	0.18	23.75	19 38 30.93	15.63
	O. Arg. S. 19978 .	11	1.5	4.0	5.2	16.3	17.5	18.9	20.4	21.4	32.3	33.6	35.9	40 18.82	0.23	23.75	19 40 42.80	15.62
	B. A. C. 6795 . .	12	. .	. .	. .	52.9	54.0	55.4	56.9	58.0	. .	. .	. .	42 55.44	0.17	23.75	19 43 19.36	15.43
	B. A. C. 6816 . .	13	40.5	42.8	44.3	55.8	57.2	58.7	0.1	1.2	12.6	14.1	16.5	45 58.53	0.25	23.75	19 46 22.53	16.14
	Lacaille 8296 . .	14	52.5	55.0	56.4	8.2	9.4	10.9	12.3	13.5	24.8	26.4	28.8	51 10.75	0.26	23.75	19 51 34.76	16.20
	Lacaille 8312 . .	15	53.3	56.0	57.6	9.7	11.0	12.5	14.0	15.3	27.3	28.8	31.4	54 12.45	0.28	23.75	19 54 36.48	16.70
	Lacaille 8326 . .	16	. .	. .	. .	13.1	14.6	17.2	35.7	38.5	40.0	41.3	43.2	56 30.45	31.77	23.75	19 56 22.43	— 16.54
	λ Ursæ Minoris . .	17	. .	. .	. .	. .	19.0	22.5	25.0	18.0	. .	. .	. .	0 51.12	31.37	23.74	20 0 43.49	+ 189.92
	α^2 Capricorni . . .	18	51.9	53.9	55.1	5.0	6.1	7.3	8.5	9.5	19.3	20.6	22.5	10 7.24	0.17	23.74	20 10 31.15	— 14.08
	ρ Capricorni . . .	19	27.0	29.0	30.4	40.6	41.6	42.8	44.2	45.2	55.3	56.6	58.6	20 42.85	0.19	23.74	20 21 6.78	14.50
	Lacaille 8476 . .	20	34.8	37.3	38.7	49.9	51.1	52.6	54.0	55.2	6.3	7.9	10.2	23 52.55	0.25	23.74	20 24 16.54	15.84
	Lacaille 8492 . .	21	43.1	45.6	46.8	58.1	59.3	0.7	2.0	3.2	14.2	15.8	17.9	26 0.61	+ 0.24	23.74	20 26 24.59	15.73
	β Microscopii . . .	22	. .	. .	. .	22.3	23.8	26.2	44.2	47.1	48.4	49.7	51.4	43 39.14	— 30.60	23.73	20 43 32.27	15.95
	Lacaille 8619 . .	23	48.0	50.3	51.8	. .	. .	. .	. .	. .	19.5	21.1	23.6	47 5.72	+ 0.30	23.73	20 47 29.75	15.74
	* — 32° 2′ . . .	24	. .	. .	. .	8.1	9.2	10.6	12.1	13.3	. .	. .	. .	47 10.66	0.20	23.73	20 47 34.59	15.74
	Lacaille 8630 . .	25	42.2	44.8	46.2	58.2	59.5	0.9	2.5	3.7	15.6	17.3	19.6	51 0.95	0.27	23.73	20 51 24.95	16.23
	B. A. C. 7292 . .	26	33.5	36.2	37.8	50.2	51.5	53.1	54.7	56.0	8.1	9.7	12.1	53 52.99	0.29	23.73	20 54 17.01	16.50
	Lacaille 8677 . .	27	45.2	47.8	49.3	1.5	2.7	4.0	5.5	6.7	18.6	20.2	22.7	57 4.02	0.27	23.73	20 57 28.02	16.19
	ν Aquarii	28	32.6	34.7	35.9	45.8	46.9	48.1	49.4	50.3	0.0	1.2	3.3	1 48.02	0.17	23.73	21 2 11.92	14.03
	Lacaille 8736 . .	29	10.1	12.6	13.9	25.0	26.2	27.8	29.1	30.3	41.2	42.7	45.0	5 27.63	0.24	23.73	21 5 51.60	15.46
	Lacaille 8758 . .	30	34.0	36.5	38.0	49.1	50.4	51.8	53.3	54.4	5.4	6.9	9.3	8 51.74	0.24	23.73	21 9 15.71	15.54
	Moon I	31	39.6	41.6	42.8	52.9	54.0	55.2	56.6	57.6	7.5	8.9	11.0	12 55.25	0.17	23.73	21 13 19.15	. .
	B. A. C. 7426 . .	32	49.0	51.3	52.7	3.3	4.4	5.8	7.0	8.1	18.6	19.9	22.2	16 5.66	0.22	23.73	21 16 29.61	14.96
	Lacaille 8821 . .	33	53.4	55.9	57.2	8.1	9.3	10.6	11.9	13.2	23.9	25.3	27.7	19 10.59	0.28	23.73	21 19 34.60	15.21
	β Aquarii	†34	45.7	48.0	49.0	58.9	0.0	1.1	2.0	3.0	12.8	14.0	16.0	24 0.95	0.15	23.73	21 24 24.83	13.71
	β Cephei	†35	49.3	55.4	58.8	27.0	30.2	33.0	36.7	39.6	7.7	10.9	16.9	26 33.23	0.04	23.73	21 26 57.00	6.74
	ξ Aquarii	†36	52.5	54.5	55.7	5.5	6.5	7.7	9.0	10.0	19.6	20.8	22.7	30 7.68	0.16	23.72	21 30 31.56	13.85
R.	α Leonis	37	27.5	29.7	30.8	40.6	41.7	43.0	44.3	45.3	54.8	56.2	58.3	0 42.93	0.17	23.41	10 1 6.51	— 11.76
24	Sun I	38	26.8	28.9	29.8	39.6	40.5	41.8	42.7	44.1	53.7	55.0	56.5	2 41.76	0.14	23.38	12 3 5.28	. .
	Sun II	39	34.9	36.9	38.2	47.9	48.8	49.9	51.3	52.2	1.7	2.8	4.9	4 49.95	0.14	23.38	12 5 13.47	. .
	Venus I	40	1.2	3.2	4.5	14.3	15.4	16.5	17.9	18.8	28.7	29.9	31.7	14 16.55	+ 0.12	23.38	12 14 40.05	+ 2.05
	Polaris, S. P. . .	41	. .	. .	. .	35.0	45.0	4.0	14.0	35.0	. .	. .	. .	10 2.60	— 8.34	23.36	1 10 17.68	— 135.26
	α Bootis	42	47.0	49.2	50.3	0.7	1.6	3.2	4.2	5.4	15.3	16.7	18.8	9 2.95	+ 0.19	23.34	18 9 26.48	9.82
	α Cygni	43	4.1	6.9	8.6	22.2	23.9	25.5	27.2	28.5	42.0	43.6	46.7	36 25.38	+ 0.35	23.24	20 36 48.97	9.46
	γ Delphini, (1st *) .	44	. .	. .	. .	. .	. .	. .	28.6	31.0	32.2	33.4	35.0	40 32.04	— 34.25	23.24	20 40 21.03	12.08
	γ Delphini, (2d *) .	45	. .	. .	. .	56.2	57.5	58.7	59.8	1.0	10.6	12.0	14.0	40 3.72	— 5.00	23.24	20 40 21.96	12.08
	μ Aquarii	46	41.3	43.2	44.5	54.3	55.2	56.5	57.7	58.8	8.4	9.7	11.6	44 56.47	+ 0.12	23.24	20 45 19.83	13.84
	32 Vulpeculæ . . .	47	6.6	8.8	10.3	21.1	22.2	23.5	24.9	26.0	36.7	38.2	40.2	48 23.50	0.22	23.24	20 48 46.96	11.31
	Lacaille 8658 . .	48	6.0	8.2	9.7	20.7	21.8	23.2	24.6	25.8	36.7	38.1	40.4	54 23.20	0.09	23.24	20 54 46.53	15.46
	ν Aquarii	49	33.2	35.3	36.6	46.2	47.4	48.6	49.8	50.9	0.4	1.7	3.8	1 48.54	0.12	23.24	21 2 11.90	14.02
	ζ Cygni	50	29.2	31.8	33.2	44.0	45.4	46.5	48.0	49.2	0.2	1.7	4.0	6 46.65	0.23	23.23	21 7 10.11	11.41
	Lacaille 8769 . .	51	12.3	14.5	15.9	26.9	28.0	29.5	30.9	32.1	43.0	44.3	46.6	10 29.45	0.09	23.23	21 10 52.77	15.34
	ι Capricorni . . .	52	2.1	4.3	5.5	15.6	16.8	18.1	19.0	20.1	30.2	31.4	33.5	14 17.87	0.11	23.23	21 14 41.21	14.39
	ζ Capricorni . . .	53	15.1	17.2	18.6	29.2	30.2	31.6	32.9	33.9	44.2	45.7	47.8	18 31.49	0.10	23.23	21 18 54.82	14.78
	B. A. C, 7467 . .	54	55.3	57.5	58.9	9.4	10.7	12.0	13.4	14.5	25.0	26.4	28.5	22 11.96	+ 0.10	23.23	21 22 35.29	14.98
	β Aquarii	55	. .	. .	. .	13.3	14.6	16.5	31.5	33.9	35.2	36.2	37.7	24 27.36	— 25.69	+23.23	21 24 24.90	— 13.70

34-35-36. Unsteady.

September 23, 21h. 50m. Image east $\overset{r.}{0.04}$. Clamp west.

September 24. n. = $+\overset{s.}{0}.116$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 23, 18.0	+ 23.77	— 0.013	+ 0.138
24, 18.2	+ 23.28	— 0.016	+ 0.138

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 24	ε Capricorni . . .	1	49.4	51.5	52.7	3.1	4.2	5.4	6.7	7.8	17.9	19.0	21.3	29 5.36	+ 0.10	+23.23	21 29 28.69	— 14.52
R.	γ Capricorni . . .	2	55.2	57.4	58.4	8.5	9.6	10.9	12.3	13.2	23.1	24.3	26.4	32 10.84	0.11	23.23	21 32 34.18	14.34
	B. A. C. 7549 . .	3	56.0	58.4	59.6	10.3	11.4	12.9	14.2	15.3	25.7	27.1	29.2	35 12.74	0.10	23.23	21 35 36.07	14.83
	Lacaille 8923 . .	4	. .	. .	. .	56.7	57.8	59.2	0.5	1.7	. .	. .	. .	39 59.18	0.05	23.22	21 40 22.45	14.93
	μ Capricorni . . .	5	14.9	16.9	18.3	28.2	29.2	30.4	31.6	32.7	42.5	43.8	45.8	45 30.39	+ 0.11	23.22	21 45 53.72	14.22
	B. A. C. 7632 . .	6	. .	. .	. .	3.8	5.3	8.1	26.8	29.7	31.3	32.6	34.4	48 21.50	— 32.45	23.22	21 48 12.27	15.79
	Lacaille 8989 . .	†7	21.6	23.9	25.3	36.3	37.5	38.9	40.3	41.3	52.1	53.5	55.9	52 38.78	+ 0.09	23.22	21 53 1.09	14.94
	ι Aquarii . . .	8	27.6	29.7	30.9	40.8	41.8	43.2	44.5	45.5	55.4	56.5	58.6	58 43.14	0.11	23.22	21 59 6.47	14.12
	B.-A. C. 7729 . .	9	5.3	7.5	8.9	19.9	21.1	22.3	23.9	25.0	35.6	36.9	39.2	3 22.33	0.09	23.22	22 3 45.64	14.86
	B. A. C. 7739 . .	10	16.0	18.0	19.7	30.5	31.7	32.9	34.3	35.4	46.0	47.5	49.7	4 32.88	+ 0.09	23.22	22 4 56.19	14.84
	Moon I	11	31.2	32.2	33.3	34.7	35.7	. .	4.1	6.5	7.7	8.9	10.4	10 50.47	— 17.02	23.22	22 10 56.67	. .
	Lacaille 9126 . .	12	23.7	26.0	27.3	37.9	39.0	40.3	41.9	43.0	53.1	54.6	56.7	16 40.32	+ 0.10	23.22	22 17 3.64	14.53
	Lacaille 9135 . .	13	. .	. .	. .	39.5	40.5	41.8	43.3	44.4	. .	. .	. .	19 41.86	0.05	23.21	22 20 5.12	14.68
	σ Aquarii	14	49.4	51.4	52.8	2.6	3.6	. .	6.0	7.2	16.6	17.8	19.9	23 4.73	0.13	23.21	22 23 28.07	13.92
	κ Aquarii	15	5.5	7.4	8.6	18.5	19.5	20.7	21.9	23.0	32.3	33.6	35.6	30 20.60	0.13	23.21	22 30 43.94	13.68
25	μ Aquarii	16	41.3	43.4	44.6	54.4	55.4	56.6	57.7	58.8	8.5	9.7	11.8	44 56.56	+ 0.17	23.12	20 45 19.85	13.83
	Lacaille 8619 . .	17	. .	. .	. .	3.6	5.0	6.3	7.7	8.8	20.1	21.5	23.8	47 12.10	— 5.61	23.12	20 47 29.61	15.72
Y.	* — 32° 1′ . .	18	. .	. .	. .	. .	. .	. .	46.4	49.0	50.6	51.9	53.6	47 50.30	38.83	23.12	20 47 34.59	15.72
	Lacaille 8630 . .	19	. .	. .	. .	58.8	0.1	1.5	3.1	4.5	16.3	18.0	20.4	51 7.84	— 5.91	23.12	20 51 25.05	16.20
	B. A. C. 7286 . .	20	. .	. .	. .	18.2	19.5	21.0	22.5	23.7	. .	. .	. .	53 20.98	+ 0.25	23.11	20 53 44.34	16.47
	B. A. C. 7292 . .	21	34.4	37.0	38.6	50.8	52.2	53.8	55.2	56.5	8.7	10.4	12.8	53 53.67	0.31	23.11	20 54 17.09	16.47
	Lacaille 8677 . .	22	46.0	48.7	50.0	2.1	3.2	4.8	6.4	7.4	19.3	20.9	23.7	57 4.77	0.30	23.11	20 57 28.18	16.16
	Lacaille 8706 . .	23	20.7	23.1	24.5	36.1	37.3	38.7	40.0	41.3	52.7	54.3	56.6	1 38.66	0.28	23.11	21 2 2.05	15.77
	ζ Cygni	24	29.6	32.0	33.3	44.4	45.6	47.0	48.5	49.5	0.4	1.8	4.0	6 46.92	0.06	23.11	21 7 10.09	11.39
	Lacaille 8758 . .	25	34.7	37.2	38.5	49.8	51.0	52.5	53.9	55.1	6.1	7.6	9.8	8 52.38	0.26	23.11	21 9 15.75	15.52
	Lacaille 8777 . .	26	14.4	16.5	17.8	28.8	29.9	31.2	32.5	33.5	44.2	45.7	47.8	11 31.12	0.24	23.11	21 11 54.47	15.11
	B. A. C. 7419 . .	27	22.6	24.9	26.2	36.7	38.0	39.3	40.6	41.6	52.3	53.7	55.8	15 39.25	0.23	23.10	21 16 2.58	15.00
	B. A. C. 7434 . .	28	15.4	17.9	19.2	29.7	31.0	32.3	33.5	34.6	45.2	46.6	48.8	17 32.20	+ 0.23	23.10	21 17 55.53	15.00
	β Cephei	†29	49.7	56.2	59.3	27.5	30.7	34.0	37.6	40.4	8.2	11.9	17.6	26 33.92	— 0.05	23.10	21 26 56.97	6.54
	μ Capricorni . . .	†30	14.9	16.9	18.3	28.2	29.3	30.6	31.8	32.8	42.6	43.9	45.9	45 30.47	+ 0.18	23.09	21 45 53.74	14.21
	Moon I	31	36.7	38.7	40.1	50.0	51.2	52.4	53.5	54.5	4.4	5.6	7.6	6 52.25	0.14	23.05	23 7 15.44	. .
	b Piscium	32	48.0	49.9	51.2	1.0	2.0	3.2	4.3	5.3	14.8	16.1	18.0	13 3.09	0.13	23.05	23 13 26.27	13.53
	κ Piscium	33	20.8	22.9	24.1	33.6	34.6	35.8	37.1	38.0	47.4	48.8	50.8	19 35.81	0.14	23.05	23 19 59.00	13.62
	B. A. C. 8184 . .	34	53.2	55.3	56.5	6.2	7.3	8.4	9.6	10.6	20.2	21.2	23.3	22 8.35	+ 0.15	23.04	23 22 31.54	13.67
	B. A. C. 8213 . .	†35	. .	. .	. .	15.5	32.0	53.0	13.5	29.0	. .	. .	. .	27 52.60	— 1.21	23.04	23 28 14.43	24.52
	ι Piscium	36	20.5	22.5	23.6	33.4	34.4	35.5	36.8	37.9	47.4	48.6	50.6	32 35.56	+ 0.12	23.04	23 32 58.72	13.70
	Lacaille 9579 . .	37	45.3	47.7	48.9	59.8	0.9	2.3	3.6	4.7	15.4	16.7	18.9	37 2.20	0.24	23.04	23 37 25.48	13.91
	Weisse 809 . . .	38	. .	. .	. .	0.1	1.0	2.3	3.5	4.5	. .	. .	. .	40 2.28	0.09	23.04	23 40 25.41	13.63
	Lacaille 9610 . .	†39	. .	. .	. .	22.3	23.5	24.8	26.2	27.2	. .	. .	. .	42 24.80	0.18	23.03	23 42 48.01	13.84
	ω Piscium	40	42.9	45.0	46.2	55.8	56.8	58.0	59.2	0.1	9.8	11.0	13.0	51 57.98	0.12	23.03	23 52 21.13	— 13.68
	B. A. C. 4165, S. P.	41	. .	. .	. .	21.0	42.0	58.0	13.5	37.5	. .	. .	. .	12 58.40	+ 2.76	23.02	12 13 24.18	+ 55.50
	Lacaille 90 . . .	42	. .	. .	. .	16.8	18.2	20.4	37.0	39.6	41.0	42.3	43.8	20 32.39	— 28.41	23.02	0 20 27.00	— 13.41
	B. A. C. 113 . .	43	32.4	34.5	35.6	45.4	46.3	47.6	48.7	49.8	59.3	0.5	2.6	22 47.52	+ 0.13	23.02	0 23 10.67	13.70
	Lacaille 118 . .	44	. .	. .	. .	24.7	26.1	28.4	44.8	47.3	48.7	49.9	51.5	25 40.18	— 28.19	23.01	0 25 35.00	13.36
	Lacaille 138 . .	45	37.8	40.2	41.3	52.3	53.4	54.8	56.0	57.2	7.8	9.3	11.5	27 54.69	+ 0.24	23.01	0 28 17.94	13.32
	B. A. C. 160 . .	46	42.7	45.0	46.4	57.1	58.2	59.6	0.9	1.9	12.4	13.8	16.0	29 59.46	0.23	23.01	0 30 22.70	13.30
	Lacaille 167 . .	47	3.3	5.6	6.8	17.4	18.5	19.9	21.2	22.3	32.7	34.1	36.3	33 19.83	0.23	23.01	0 33 43.07	13.28
	Lacaille 194 . .	48	28.0	30.5	31.8	43.3	44.5	45.8	47.4	48.5	59.6	1.1	3.4	37 45.81	0.27	23.01	0 38 9.09	13.13
	Lacaille 217 . .	49	25.2	27.6	28.9	40.2	41.6	43.0	44.5	45.6	56.8	58.2	0.6	40 42.93	0.27	23.01	0 41 6.21	13.08
	Lacaille 224 . .	50	. .	. .	. .	27.5	28.7	29.8	31.2	32.2	. .	. .	. .	42 29.88	0.18	23.01	0 42 53.07	13.18
	Lacaille 241 . .	†51	53.4	55.7	56.9	7.6	8.8	10.1	11.4	12.5	23.0	24.4	26.6	46 10.04	0.23	23.00	0 46 33.27	13.11
	Lacaille 252 . .	52	4.9	7.2	8.5	19.3	20.3	21.6	22.8	24.0	34.5	36.0	38.0	48 21.55	0.23	23.00	0 48 44.78	13.09
	70 Piscium . . .	53	. .	. .	. .	38.9	39.8	41.0	42.2	43.2	. .	. .	. .	54 41.02	0.07	23.00	0 55 4.09	13.81
	ε Piscium . . .	54	16.3	18.4	19.6	29.4	30.4	31.6	32.8	33.8	43.4	44.6	46.5	55 31.53	+ 0.12	+23.00	0 55 54.65	— 13.81

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 25, 22.8	+ 23.06	— 0.028	+ 0.138

7. Apparently close double (?)
29. Through clouds.
30. Faint through clouds.
35. Observed with eye and ear.
39. Through clouds.
51. Duplex; faint companion to northward.

September 25. Stars very much blurred.

September 25, 0h. Image east $\overset{r.}{0.04}$. Clamp west.

September 25 n. = — 0.165.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
t. 25	Polaris	1	47. 5	10. 0	58. 0	28. 5	9. 5	55. 0	49. 0	27. 0	49. 0	41. 5	0. 0	9 55. 91	— 1. 08	+22. 59	1 10 17. 42	— 135. 46
R.	α Leonis	2	28. 2	30. 3	31. 7	41. 3	42. 6	43. 9	45. [illegible]	46. 0	55. 6	57. 0	59. 1	0 43. 70	+ 0. 16	22. 69	10 1 6. 55	11. 79
26	Sun I	3	39. 0	40. 9	42. 2	52. 0	53. 2	54. 3	55. 5	56. 6	5. 8	7. 4	9. 3	9 54. 20	0. 14	22. 67	12 10 17. 01	. .
	Sun II	4	47. 4	49. 3	50. 5	0. 3	1. 3	2. 5	3. 8	4. 7	14. 0	15. 4	17. 4	12 2. 42	+ 0. 14	22. 67	12 12 25. 23	. .
	Polaris, S. P.	5	. .	. .	. .	28. 0	48. 0	2. 0	13. 0	32. 0	. .	. .	.	10 0. 60	— 5. 19	22. 66	13 10 18. 07	135. 68
	α Virginis	6	. .	. .	. .	. .	. .	. .	8. 4	10. 7	12. 1	13. 5	14. 5	18 11. 84	— 33. 57	22. 66	13 18 0. 93	11. 54
	α Bootis	7	47. 7	49. 7	51. 1	1. 3	2. 4	3. 5	4. 9	6. 0	16. 0	17. 5	19. 5	9 3. 60	+ 0. 15	22. 65	14 9 26. 40	9. 81
	α Cor. Borealis	8	15. 2	17. 4	18. 8	29. 7	31. 0	32. 2	33. 4	34. 5	45. 4	46. 7	49. 0	28 32. 12	0. 16	22. 64	15 28 54. 92	9. 24
	α Serpentis	9	55. 5	57. 8	58. 8	8. 5	9. 6	10. 7	11. 9	13. 0	22. 6	23. 8	25. 8	37 10. 73	0. 14	22. 64	15 37 33. 51	11. 07
	θ Aquarii	10	2. 3	4. 5	5. 7	15. 3	16. 5	17. 7	18. 9	20. 0	29. 7	30. 9	32. 8	9 17. 66	0. 16	22. 58	22 9 40. 40	13. 83
	Lacaille 9135	11	25. 6	27. 8	29. 0	40. 0	41. 2	42. 4	43. 7	45. 0	55. 5	56. 9	59. 4	19 42. 41	0. 24	22. 58	22 20 5. 23	14. 67
	Lacaille 9180	12	29. 1	31. 3	32. 6	43. 2	44. 5	45. 9	47. 1	48. 4	58. 5	59. 8	2. 3	27 45. 70	0. 23	22. 58	22 28 8. 51	14. 48
	Lacaille 9199	13	31. 6	34. 0	35. 5	46. 5	47. 8	49. 1	50. 4	51. 6	2. 4	4. 0	6. 2	30 49. 01	0. 25	22. 58	22 31 11. 84	14. 70
	Lacaille 9209	14	14. 2	16. 3	17. 9	28. 4	29. 7	30. 9	32. 3	33. 4	43. 9	45. 1	47. 6	33 30. 88	0. 24	22. 58	22 33 53. 70	14. 50
	20 Piscis Australis	15	26. 1	28. 4	29. 6	40. 5	41. 6	42. 9	44. 4	45. 5	56. 0	57. 2	59. 5	37 42. 88	0. 23	22. 58	22 38 5. 69	14. 46
	Lacaille 9256	16	49. 6	52. 0	53. 1	4. 0	5. 2	6. 5	8. 0	9. 0	19. 7	21. 2	23. 4	40 6. 52	0. 24	22. 58	22 40 29. 34	14. 47
	λ Aquarii	17	54. 6	56. 4	57. 7	7. 4	8. 5	9. 7	10. 9	12. 0	21. 3	23. 0	24. 7	45 9. 65	+ 0. 16	22. 58	22 45 32. 39	13. 76
	B. A. C. 8026	†18	. .	. .	. .	52. 5	1. 5	11. 6	22. 5	33. 3	. .	. .	. .	55 12. 28	— 0. 66	22. 58	22 55 34. 20	11. 74
	Flora	†19	1. 7	3. 7	5. 0	15. 1	16. 3	. .	18. 6	19. 7	29. 7	30. 9	33. 0	4 17. 37	+ 0. 20	22. 57	23 4 40. 14	. .
	γ Piscium	20	30. 5	32. 4	33. 7	43. 3	44. 4	45. 5	46. 8	47. 8	57. 4	58. 5	0. 6	9 45. 54	0. 13	22. 57	23 10 8. 24	13. 73
	α Andromedæ	21	43. 5	45. 8	47. 2	58. 2	59. 2	0. 6	1. 9	3. 0	13. 5	15. 3	17. 7	1 0. 54	0. 07	22. 57	0 1 23. 18	14. 02
	Moon II	22	25. 3	27. 2	28. 6	38. 7	39. 6	40. 6	41. 9	43. 0	53. 0	54. 1	56. 1	4 40. 74	0. 13	22. 56	0 5 3. 43	. .
	d Piscium	23	59. 7	1. 5	2. 8	12. 5	13. 5	14. 5	15. 8	16. 9	26. 7	27. 8	29. 3	13 14. 64	0. 12	22. 56	0 45 37. 32	13. 73
	45 Piscium	24	. .	. .	. .	17. 7	18. 8	20. 0	21. 2	22. 0	. .	. .	. .	18 19. 94	+ 0. 07	22. 56	0 18 42. 57	13. 74
	Neptune	25	. .	. .	. .	. .	. .	. .	50. 0	52. 2	53. 5	54. 8	56. 2	19 53. 34	— 33. 02	22. 56	0 19 42. 88	. .
	13 Ceti	26	38. 3	40. 5	41. 5	51. 3	52. 3	53. 5	54. 7	55. 6	5. 1	6. 3	8. 3	27 53. 40	+ 0. 15	22. 56	0 28 16. 11	13. 61
	β Ceti	27	8. 3	10. 4	11. 6	22. 0	23. 0	24. 3	25. 5	26. 7	36. 5	37. 9	39. 9	36 24. 19	0. 20	22. 56	0 36 46. 95	13. 39
27	β Ceti	†28	8. 3	10. 6	11. 7	22. 1	23. 1	24. 6	25. 9	26. 8	36. 8	37. 9	40. 0	36 24. 35	0. 20	22. 51	0 36 47. 06	13. 40
Y.	Lacaille 203	29	48. 4	50. 6	51. 9	2. 5	3. 6	5. 0	6. 1	7. 2	17. 4	18. 9	21. 0	39 4. 78	0. 22	22. 51	0 39 27. 51	13. 24
	Lacaille 257	30	32. 9	35. 3	36. 6	47. 3	48. 5	49. 7	51. 1	52. 3	2. 7	4. 0	6. 4	49 49. 71	0. 23	22. 50	0 50 12. 44	13. 08
	ε Piscium	†31	16. 9	19. 0	20. 2	30. 0	31. 1	32. 2	33. 3	34. 2	43. 7	45. 0	46. 9	55 32. 04	0. 12	22. 50	0 55 54. 66	13. 83
	Moon	†32	46. 0	48. 1	49. 1	59. 4	0. 5	1. 6	2. 9	3. 8	13. 8	14. 8	17. 2	0 1. 56	0. 11	22. 50	1 0 24. 17	. .
	ζ Piscium	33	1. 4	3. 3	4. 5	14. 2	15. 3	16. 4	17. 5	18. 7	28. 2	29. 5	31. 7	6 16. 43	0. 12	22. 50	1 6 39. 05	13. 85
	B. A. C. 369	34	41. 3	42. 5	43. 7	45. 1	47. 4	. .	47. 9	50. 3	51. 3	52. 4	54. 1	6 17. 60	+ 0. 37	22. 50	1 6 40. 47	13. 85
	Polaris	†35	. .	. .	. .	34. 0	15. 0	0. 0	46. 0	28. 0	. .	. .	. .	10 0. 60	— 3. 00	22. 50	1 10 20. 10	136. 09
	θ Ceti	36	37. 0	39. 1	40. 2	50. 1	51. 1	52. 3	53. 4	54. 4	4. 1	5. 3	7. 3	16 52. 21	+ 0. 16	22. 49	1 17 14. 86	13. 29
	η Piscium	†37	. .	37. 7	38. 9	49. 2	50. 1	51. 4	52. 6	53. 6	3. 3	4. 8	. .	23 51. 29	0. 09	22. 49	1 24 13. 87	14. 21
	α Leonis	38	28. 8	. .	32. 0	41. 9	43. 0	44. 3	45. 5	46. 5	56. 1	. .	59. 5	0 44. 18	0. 11	22. 34	10 1 6. 63	11. 83
	Venus II	39	33. 1	35. 1	36. 3	45. 9	47. 1	48. 3	49. 6	50. 5	0. 0	1. 4	3. 4	5 48. 25	0. 17	22. 28	12 6 10. 70	2. 08
28	Sun I	40	52. 0	54. 0	55. 4	5. 2	6. 2	7. 4	8. 6	9. 5	19. 0	20. 3	22. 2	17 7. 25	0. 13	22. 28	12 17 29. 66	. .
	Sun II	41	0. 6	2. 7	3. 9	13. 5	14. 6	15. 7	16. 9	17. 9	27. 5	28. 7	30. 4	19 15. 67	0. 13	22. 27	12 19 38. 07	. .
	Polaris, S. P.	†42	. .	. .	. .	40. 0	20. 0	. .	2. 0	. .	. .	. .	. .	9 40. 67	20. 03	22. 25	1 10 22. 95	136. 26
	α Bootis	43	48. 0	50. 1	51. 3	1. 8	2. 8	4. 0	5. 3	6. 2	16. 3	17. 7	19. 8	9 3. 94	0. 20	22. 22	14 9 26. 36	9. 79
	α Cor. Borealis	44	15. 4	17. 8	19. 1	29. 9	31. 1	32. 5	33. 8	34. 9	45. 6	47. 0	49. 2	28 32. 29	0. 23	22. 18	15 28 54. 80	9. 20
	α Serpentis	45	56. 0	58. 1	59. 3	9. 0	10. 2	11. 3	12. 5	13. 5	23. 0	24. 3	26. 3	37 11. 23	+ 0. 16	22. 17	15 37 33. 56	— 11. 06
	λ Ursæ Minoris	46	. .	. .	. .	. .	. .	. .	16. 0	15. 5	22. 0	21. 0	41. 0	29 11. 10	— 28 56. 07	22. 18	20 0 37. 21	+ 195. 40
	μ Aquarii	47	42. 0	44. 3	45. 4	55. 2	56. 3	57. 5	58. 6	59. 7	9. 3	10. 6	12. 6	44 57. 41	+ 0. 14	22. 22	20 45 19. 77	— 13. 79
	32 Vulpeculæ	48	7. 4	9. 7	10. 9	21. 8	23. 1	24. 4	25. 6	26. 9	37. 6	38. 9	41. 3	48 24. 35	0. 15	22. 22	20 48 46. 72	11. 24
	O. Arg. S. 21046	49	36. 5	38. 8	39. 9	50. 2	51. 3	52. 5	53. 7	54. 9	4. 9	6. 4	8. 5	53 52. 51	0. 15	22. 23	20 54 14. 89	14. 55
	O. Arg. S. 21053	50	23. 6	25. 8	27. 1	37. 3	38. 3	39. 5	40. 9	41. 9	52. 0	53. 5	55. 5	54 39. 58	0. 15	22. 23	20 55 1. 96	14. 55
	B. A. C. 7340	51	40. 6	42. 8	44. 0	54. 8	55. 9	57. 2	58. 4	59. 4	9. 9	11. 2	13. 3	0 57. 05	0. 15	22. 23	21 1 19. 43	14. 89
	B. A. C 7359	52	44. 7	47. 1	48. 3	59. 1	0. 3	1. 6	2. 7	3. 8	14. 4	15. 8	18. 0	5 1. 44	0. 15	22. 24	21 5 23. 83	14. 98
	Lacaille 8758	53	35. 8	38. 1	39. 6	50. 8	52. 2	53. 4	54. 8	55. 9	7. 1	8. 4	10. 8	8 53. 35	+ 0. 16	+22. 24	21 9 15. 75	— 15. 48

18. Very unsteady.
19. Just visible.
28. Unsteady.
31. Unsteady.
32. Limb broken.
35. Very unsteady.
37. Very unsteady.
42. Very unsteady.

September 26. Night unfavorable. Stars blurred.

s.
September 25–26, 10h. to 16h. n. = + 0. 038.
26, 22h. to 1h — 0. 165.
27, . . . — 0. 165.
28, Day observations + 0. 156.
20h. to 22h. 0. 000.
22h. to 0h. — 0. 070.
After 0h. — 0. 156.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 26, 17. 9	+ 22. 62	— 0. 009	+ 0. 138
27, 1. 0	+ 22. 50	— 0. 021	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Redu 186
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Sept. 28	Lacaille 8776 . .	1	12.7	15.1	16.5	27.0	28.4	29.8	31.0	32.1	43.0	44.5	46.6	11 29.70	+ 0.16	+22.24	21 11 52.10	— 1
	B. A. C. 7413 . .	2	34.5	36.7	38.0	48.7	49.8	51.0	52.3	53.4	3.7	5.1	7.2	14 50.95	0.15	22.24	21 15 13.34	1
	B. A. C. 7436 . .	3	20.5	22.9	24.1	34.7	35.9	37.1	38.5	39.6	49.9	51.4	53.5	17 37.10	0.15	22.25	21 17 59.50	1
♈.	5 Piscis Australis .	4	16.6	19.0	20.3	31.8	33.0	34.3	35.7	36.8	48.0	49.5	51.9	20 34.26	+ 0.16	22.25	21 20 56.67	1
	Lacaille 8834 . .	5	. .	. .	. .	42.9	44.3	46.7	3.0	5.7	7.0	8.3	9.9	22 58.48	— 28.49	22.25	21 22 52.24	1
	Lacaille 8846 . .	6	38.5	41.1	42.6	54.6	56.1	57.5	59.2	0.3	12.4	13.8	16.2	25 57.48	+ 0.17	22.25	21 26 19.90	1
	* — 46° 10′ . .	7	54.5	57.2	58.8	11.3	12.5	14.0	15.7	17.0	. .	. .	. .	30 7.62	6.66	22.26	21 30 36.54	1
	Lacaille 8911 . .	8	39.6	42.0	43.3	55.2	56.3	57.8	59.0	0.2	11.6	13.1	15.4	37 57.59	+ 0.17	22.26	21 38 20.02	1
	Lacaille 8923 . .	9	. .	. .	. .	. .	. .	. .	33.4	36.0	37.4	38.6	40.2	40 37.12	— 36.90	22.27	21 40 22.49	1
	Lacaille 8941 . .	10	2.0	4.3	5.5	16.0	17.2	18.5	19.9	20.9	31.2	32.6	34.8	43 18.45	+ 0.15	22.27	21 43 40.87	1
	μ Capricorni . . .	11	15.8	18.0	19.1	29.0	30.1	31.3	32.5	33.5	43.4	44.7	46.8	45 31.29	0.14	22.27	21 45 53.70	1
	O. Arg. S. 21772 .	12	30.2	31.6	33.1	34.3	37.0	. .	43.1	45.6	47.0	48.1	49.7	51 9.97	0.43	22.28	21 51 32.68	1
	Lacaille 8982 . .	13	59.3	1.6	2.9	13.6	14.7	15.9	17.2	18.4	28.8	30.1	32.3	51 15.89	+ 0.15	22.28	21 51 38.32	1
	Lacaille 9005 . .	14	. .	. .	. .	. .	. .	. .	35.8	38.4	39.7	41.0	42.5	55 39.48	— 37.30	22.28	21 55 24.46	1
	O. Arg. S. 21910 .	15	59.8	2.3	3.4	14.1	15.3	16.5	17.7	18.9	29.2	31.7	32.9	0 16.53	+ 0.16	22.28	22 0 38.97	1
	Lacaille 9038 . .	16	14.1	16.1	17.5	28.1	29.2	30.5	31.8	32.9	43.3	44.8	46.8	1 30.46	+ 0.16	22.28	22 1 52.90	1
	λ Piscis Australis .	17	. .	. .	. .	27.8	29.4	31.5	48.5	51.1	52.5	53.7	55.3	6 43.72	— 29.03	22.29	22 6 36.98	1
	Lacaille 9091 . .	18	37.7	40.4	41.5	53.8	55.1	56.6	58.1	59.3	11.2	13.0	15.3	9 56.55	+ 0.23	22.29	22 10 19.07	1
	Lacaille 9119 . .	19	54.5	57.3	58.6	11.3	12.5	14.3	15.7	17.1	29.5	31.2	33.4	16 14.13	0.24	22.30	22 16 36.67	1
	* — 39° 49′ . .	20	33.4	36.1	37.6	50.2	51.5	53.0	54.4	55.8	8.1	9.8	12.5	19 52.95	+ 0.24	22.30	22 20 15.49	1
	B. A. C. 7826 .	21	. .	. .	. .	34.5	36.0	38.6	57.9	1.0	2.4	3.8	5.9	20 52.51	— 33.20	22.30	22 20 41.61	1
	O. Arg. S. 22237 .	22	41.0	43.3	44.5	54.9	56.1	57.3	58.4	59.5	9.8	10.9	13.1	26 57.16	+ 0.17	22.31	22 27 19.64	1
	η Aquarii	23	. .	. .	. .	12.5	13.8	15.7	30.6	33.1	34.2	35.5	36.6	28 26.50	— 25.54	22.31	22 28 23.27	1
	B. A. C. 7895 . .	24	7.7	10.0	11.3	22.7	23.9	25.2	26.7	27.9	39.0	40.4	42.9	32 25.25	+ 0.20	22.31	22 32 47.76	14
	Lacaille 9221 . .	25	0.7	2.8	4.0	14.5	15.8	17.0	18.2	19.3	29.4	30.7	33.1	35 16.86	0.18	22.31	22 35 39.35	14
	Lacaille 9248 . .	26	1.5	3.9	5.3	17.0	18.3	19.7	21.2	22.3	33.9	35.6	38.0	39 19.70	0.22	22.31	22 39 42.23	14
	Lacaille 9271 . .	27	44.9	47.3	48.7	0.2	1.5	2.8	4.2	5.3	16.7	18.4	20.6	42 2.78	0.21	22.32	22 42 25.31	14
	γ Piscis Australis .	28	18.2	20.6	22.0	33.5	34.8	36.2	37.8	39.1	50.4	51.9	54.3	44 36.25	0.21	22.32	22 44 58.78	14
	* — 37° 26′ . .	29	. .	. .	. .	9.7	11.0	12.5	14.1	15.3	. .	. .	. .	48 12.52	0.17	22.32	22 48 35.01	14
	Lacaille 9338 . .	30	37.3	39.5	40.8	51.2	52.5	53.5	54.9	56.0	6.4	7.8	9.8	53 53.61	0.18	22.33	22 54 16.12	14
	Lalande 45137 . .	31	23.8	26.0	27.2	37.4	38.4	39.7	40.9	41.9	51.0	53.2	55.2	57 39.60	0.17	22.33	22 58 2.10	14
	Weisse 1276 . .	32	36.7	38.8	40.1	49.9	50.9	52.2	53.4	54.4	4.2	5.3	7.5	0 52.13	0.16	22.33	23 1 14.62	13
	O. Arg. S. 22666 .	33	13 2	14.4	15.8	16.9	19.5	. .	. .	. .	. .	. .	. .	4 15.96	35.61	22.34	23 5 13.91	13
	O. Arg. S. 22670 .	34	. .	. .	. .	0.3	1.4	2.7	3.9	4.9	. .	. .	. .	5 2.64	0.12	22.34	23 5 25.10	13
	γ Piscium	†35	30.8	32.8	33.8	43.6	44.6	45.9	47.0	47.9	57.4	58.6	0.7	9 45.74	0.13	22.34	23 10 8.21	13
	B. A. C. 8132 . .	36	22.1	24.5	25.8	36.7	37.9	39.2	40.5	41.7	52.4	53.8	56.0	13 39.15	0.19	22.34	23 14 1.68	14
	O. Arg. S. 22817 .	37	39.3	41.4	42.6	52.9	53.9	54.9	56.4	57.4	7.5	8.8	10.9	16 55.10	+ 0.17	22.35	23 17 17.62	13
	ε Piscium	38	17.0	. .	20.3	30.0	30.9	32.1	33.2	34.3	44.0	45.0	47.0	55 33.38	— 1.19	22.43	0 55 54.62	13
	O. Arg. S. 636 . .	39	58.7	1.4	2.5	13.2	14.4	15.6	16.9	18.0	28.5	29.9	32.2	0 15.57	+ 0.23	22.43	1 0 38.23	12
	ζ Piscium	40	39.8	41.1	42.4	43.6	46.1	. .	46.4	49.0	50.2	51.4	52.8	6 16.28	0.37	22.43	1 6 39.08	13
	B. A. C. 369 . .	41	3.0	4.9	6.1	15.7	16.8	17.9	19.0	20.0	29.9	30.9	32.8	6 17.91	+ 0.12	22.43	1 6 40.46	13
	Polaris	42	. .	. .	. .	. .	. .	57.0	48.0	30.0	. .	. .	. .	10 45.00	— 48.73	22.44	1 10 18.71	136
	θ Ceti	43	36.7	38.9	40.1	50.3	51.3	52.4	53.7	54.7	4.1	5.4	7.3	16 52.26	+ 0.16	22.44	1 17 14.86	13
	* — 18° 0′ . . .	44	51.2	53.4	54.7	4.7	5.7	7.0	8.2	9.3	19.5	20.7	22.7	20 7.01	0.20	22.44	1 20 29.65	12
	η Piscium	45	. .	37.8	39.2	49.1	50.4	51.6	52.8	53.9	3.4	4.9	. .	23 51.46	0.09	22.45	1 24 14.00	14
	Lacaille 527 . .	46	40.4	42.7	44.1	54.7	55.9	57.3	58.7	59.7	10.4	11.8	14.0	41 57.25	0.23	22.46	1 42 19.94	12
	O. Arg. S. 1179 .	47	21.8	24.1	25.3	36.3	37.4	38.7	40.0	41.1	51.5	52.9	55.1	49 38.56	0.23	22.47	1 50 1.26	12
	Lacaille 586 (1st *)	48	1.2	3.6	5.0	15.5	16.6	17.9	19.1	20.2	30.4	32.0	34.1	52 17.78	0.23	22.47	1 52 40.48	12
	Lacaille 586 (2d *)	49	38.4	39.9	41.2	42.5	45.2	. .	51.8	53.4	54.7	55.8	57.5	52 17.94	0.50	22.47	1 52 40.91	12
	Moon II . . .	50	15.5	17.6	18.9	29.0	30.2	31.5	32.7	33.8	43.8	45.1	47.2	55 31.39	0.10	22.48	1 55 53.97	.
	Lacaille 639 . .	51	9.8	12.0	13.3	24.0	25.0	26.2	27.6	28.6	39.1	40.3	42.5	2 26.22	0.23	22.48	2 2 48.93	12
	ξ^1 Ceti	52	11.1	13.3	14.4	. .	25.2	26.4	27.7	. .	38.3	39.5	41.4	5 26.37	0.13	22.48	2 5 48.98	13
	O. Arg. S. 1433 .	53	52.2	54.5	55.7	6.8	7.9	9.1	10.5	11.7	22.3	23.6	25.8	9 9.10	0.24	22.48	2 9 31.82	12
	B. A. C. 723 . .	54	. .	. .	. .	29.0	30.2	31.5	32.8	33.8	. .	. .	. .	12 31.46	0.18	22.49	2 12 54.13	12
	Lacaille 711 . .	55	21.5	23.8	25.1	36.1	37.4	38.8	40.1	41.3	52.2	53.5	55.8	15 38.69	+ 0.24	+22.49	2 16 1.42	— 11

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 28, 13.8	+ 22.23	— 0.030	+ 0.138
23.8	22.37	+ 0.049	. .
7.6	+ 22.37	0.000	. .

35. Unsteady.

September 28, 2h. 50m. Image west $0^{r}.02$. Clamp west.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
63. t.28	Lacaille 727	1	31.7	34.0	35.3	45.7	46.8	48.0	49.3	50.4	0.6	2.0	4.2	18 48.00	+ 0.21	+22.49	2 19 10.70	— 12.23
	27 Arietis	2	45.0	47.4	48.6	58.6	59.5	0.7	2.2	3.2	13.2	14.3	16.3	23 0.82	0.10	22.50	2 23 23.42	14.58
	31 Arietis	3	36.4	38.5	39.7	49.6	50.7	51.8	53.0	54.1	3.7	5.1	7.1	28 51.79	0.11	22.50	2 29 14.40	14.22
t.	Lacaille 803	4	57.4	59.8	0.9	11.5	12.6	14.0	15.2	16.3	26.4	28.0	30.1	31 13.84	0.22	22.50	2 31 36.56	12.02
	γ Ceti	5	39.0	41.0	42.1	51.8	52.8	54.0	55.1	56.2	5.6	6.9	8.8	35 53.94	0.13	22.51	2 36 16.58	13.60
	α Canis Minoris	†6	32.7	35.3	36.6	46.1	47.0	48.0	49.5	50.4	0.0	1.4	3.3	31 48.21	0.12	22.37	7 32 10.70	12.35
	β Geminorum	7	19.5	21.9	23.2	34.1	35.3	36.7	38.0	39.2	50.0	51.5	53.7	36 36.65	+ 0.07	22.37	7 36 59.09	14.40
29	Polaris	†8	. .	12.0	5.0	30.0	10.0	0.0	51.0	36.0	52.0	46.0	. .	10 0.22	— 3.20	22.02	1 10 19.04	136.78
	ν Piscium	9	45.4	47.4	48.7	58.3	59.3	0.5	1.7	2.6	12.2	13.4	15.4	34 0.45	+ 0.12	22.00	1 34 22.57	13.80
	ε Sculptoris	10	38.7	40.5	42.6	53.3	54.4	55.7	57.1	58.3	8.8	10.0	12.3	38 55.62	0.25	22.00	1 39 17.87	12.52
	Lacaille 535	11	. .	. .	. .	22.1	23.2	24.6	25.8	27.1	. .	. .	. .	43 24.56	0.23	22.00	1 43 46.79	12.29
	α Arietis	12	53.3	55.8	57.3	7.6	8.8	10.2	11.6	12.7	22.9	24.3	26.3	59 10.07	0.06	21.99	1 59 32.12	14.95
	ξ¹ Ceti	13	11.8	13.8	14.9	24.8	25.7	26.9	28.0	29.1	38.9	39.9	42.0	5 26.89	0.12	21.98	2 5 48.99	13.98
	67 Ceti	14	36.2	38.2	39.5	49.1	50.4	51.5	52.7	53.8	3.3	4.4	6.3	9 51.40	0.16	21.98	2 10 13.54	13.19
	ξ² Ceti	15	. .	. .	. .	33.0	33.9	35.2	36.4	37.6	. .	. .	. .	20 35.22	+ 0.07	21.97	2 20 57.26	13.99
	γ Ceti	16	. .	. .	. .	52.1	53.3	54.4	55.7	56.7	6.3	7.4	9.3	35 59.40	— 4.86	21.96	2 36 16.50	13.62
	π Arietis	17	5.9	8.2	9.3	19.3	20.4	21.5	22.8	23.9	33.9	35.1	37.1	41 21.58	+ 0.08	21.96	2 41 43.62	14.63
	ρ³ Arietis	18	9.2	11.2	12.6	22.8	23.7	24.9	26.1	27.5	37.3	38.6	39.5	48 24.85	0.08	21.95	2 48 46.88	14.69
	Moon II	19	0.0	2.0	3.5	13.7	14.9	16.1	17.3	18.4	28.5	30.1	32.1	51 16.05	0.08	21.96	2 51 38.09	. .
	α Ceti	20	34.4	36.5	37.7	47.4	48.4	49.5	50.7	51.7	1.3	2.4	4.4	54 49.49	0.13	21.96	2 55 11.58	13.66
	53 Arietis	21	9.9	11.8	13.1	23.5	24.5	25.7	27.1	28.0	38.2	39.3	41.4	59 25.68	+ 0.08	21.96	2 59 47.72	14.69
	δ Arietis	22	. .	. .	. .	28.3	29.5	30.6	32.0	33.0	43.0	45.4	46.5	3 36.04	— 5.21	21.94	3 3 52.77	14.89
30	Sun I	23	. .	. .	. .	. .	. .	. .	. .	. .	32.8	33.9	36.0	24 34.23	— 13.13	21.92	12 24 43.02	. .
t.	Sun II	24	14.4	16.5	17.6	27.3	28.4	29.5	30.6	31.7	41.2	42.5	44.5	26 29.47	+ 0.13	21.92	12 26 51.52	. .
	Polaris, S. P.	25	. .	. .	. .	35.0	51.0	4.0	15.0	36.0	. .	. .	. .	10 4.20	— 7.01	21.94	13 10 19.13	136.97
	α Bootis	26	48.2	50.4	51.6	1.9	2.9	4.0	5.4	6.5	16.6	17.9	20.0	9 4.13	+ 0.18	21.97	14 9 26.28	9.78
	α Cor. Borealis	27	15.7	18.0	19.2	30.2	31.4	32.7	34.1	35.2	45.8	47.4	49.4	28 32.65	0.20	22.00	15 28 54.85	9.15
	α Serpentis	28	56.3	58.3	59.5	9.2	10.3	11.4	12.7	13.7	23.2	24.4	26.4	37 11.40	0.15	22.00	15 37 33.55	11.04
	O. Arg. S. 1655	29	4.2	6.3	7.7	17.9	19.0	20.2	21.5	22.4	32.4	33.6	35.9	28 20.10	0.21	22.30	2 28 42.61	12.38
	O. Arg. S. 1696	30	57.6	59.8	1.1	11.7	12.8	14.1	15.4	16.4	26.8	28.2	30.4	31 14.03	+ 0.22	22.30	2 31 36.55	12.06
	Lacaille 814	31	. .	. .	. .	. .	. .	. .	20.9	23.6	24.8	26.1	27.7	33 24.62	— 37.46	22.30	2 33 9.46	11.72
	γ Ceti	32	39.1	41.0	42.3	51.9	53.1	54.3	55.4	56.5	5.9	7.2	9.2	35 54.17	+ 0.13	22.30	2 36 16.60	13.64
	Lacaille 865	33	29.0	31.2	32.5	43.2	44.4	45.7	46.9	48.2	58.7	0.1	2.4	39 45.66	0.23	22.30	2 40 8.19	11.81
	O. Arg. S. 1838	34	45.7	47.9	49.0	59.2	0.3	1.5	2.7	3.8	14.0	15.2	17.3	43 1.51	+ 0.21	22.30	2 43 24.02	12.32
	B. A. C. 894	35	. .	. .	. .	3.0	4.5	6.7	24.3	26.9	28.4	29.7	31.5	46 19.38	— 29.81	22.30	2 46 11.87	11.33
	Lacaille 918	36	14.9	17.3	18.6	29.9	31.1	32.5	33.9	35.2	46.2	47.6	50.1	48 32.48	+ 0.26	22.31	2 48 55.05	11.29
	ε Arietis	37	49.2	51.5	52.8	3.1	4.3	5.5	6.7	7.7	17.6	19.2	21.4	51 5.36	+ 0.09	22.31	2 51 27.76	14.98
	Lacaille 959	38	. .	. .	. .	. .	. .	. .	5.7	8.4	9.8	11.0	12.9	55 9.56	— 37.37	22.31	2 54 54.50	11.47
	O. Arg. S. 2000	39	6.3	8.5	9.6	19.7	20.9	22.2	23.5	24.4	34.5	35.8	37.8	57 22.11	+ 0.20	22.31	2 57 44.62	12.17
	Lacaille 981	†40	19.1	22.6	23.0	34.3	35.4	36.6	38.0	39.3	50.2	51.6	54.1	0 36.65	0.25	22.31	3 0 59.21	11.20
	δ Arietis	†41	14.5	16.6	17.7	28.1	29.1	30.3	31.4	32.6	42.6	44.0	45.9	3 30.25	0.09	22.31	3 3 52.65	14.92
	B. A. C. 1019	42	55.9	58.3	59.7	11.0	12.3	13.7	15.0	16.3	27.5	28.9	31.3	10 13.63	0.26	22.32	3 10 36.21	11.01
	B. A. C. 1049	43	49.5	51.9	53.3	4.0	5.0	6.3	7.5	8.5	19.0	20.4	22.4	15 6.16	0.22	22.32	3 15 28.70	11.55
	O. Arg. S. 2245	44	26.8	29.0	30.3	40.4	41.7	43.0	44.1	45.2	55.4	56.7	58.9	17 42.86	0.21	22.32	3 18 5.39	11.75
	B. A. C. 1073	45	59.6	2.0	3.2	14.3	15.4	16.7	18.0	19.1	30.0	31.4	33.6	20 16.66	0.24	22.32	3 20 39.22	11.19
	9 Tauri	46	21.0	23.3	24.6	35.2	36.1	37.3	38.6	39.8	50.0	51.2	53.5	28 37.33	0.05	22.32	3 28 59.70	15.25
	* + 23° 40′	47	3.9	5.1	6.5	8.1	10.4	. .	16.1	18.6	20.0	21.3	22.8	40 43.28	0.35	22.33	3 41 5.96	11.33
	* + 23° 44′	48	28.5	30.7	32.0	42.4	43.6	44.8	46.3	47.3	57.8	59.2	1.1	40 44.88	0.08	22.33	3 41 7.29	11.33
	Moon II	49	45.2	47.7	48.8	59.3	0.3	1.5	2.9	4.0	14.3	15.6	17.8	47 1.58	0.09	22.33	3 47 24.00	. .
	γ Eridani	50	3.9	6.2	7.4	17.3	18.5	19.6	20.8	21.9	31.7	33.0	35.0	51 19.57	0.18	22.33	3 51 42.08	12.11
	A¹ Tauri	51	2.1	4.5	5.5	15.8	17.2	18.4	19.6	20.7	31.0	32.3	34.4	56 18.32	0.09	22.34	3 56 40.75	15.16
	O. Arg. S. 2796	52	11.2	13.4	14.7	25.1	26.2	27.6	28.8	29.8	40.0	41.3	43.4	59 27.41	0.21	22.34	3 59 49.96	11.41
	o¹ Eridani	53	36.9	39.0	40.1	50.0	51.0	52.2	53.5	54.4	3.9	5.2	7.1	4 52.12	0.16	22.34	4 5 14.62	12.56
	ω² Tauri	54	40.4	42.6	43.7	54.0	55.3	56.4	57.8	58.8	8.9	10.2	12.3	8 56.40	+ 0.09	+22.34	4 9 18.83	— 15.01

6. Unsteady.
8. Unsteady.
40. Foggy.
41. Unsteady.
46. Through thick fog.

September 29. . . . . n. = — 0.206 s.
30, 12h. to 16h. + 0.083.
2h. to 5h. — 0.206.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Sept. 29, 2.4	+ 21.97	— 0.040	+ 0.138
30, 22.9	+ 22.20	+ 0.027	

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 30	B. A. C. 1334	1	10. 8	12. 9	14. 3	24. 9	26. 0	27. 2	28. 6	29. 7	40. 0	41. 3	43. 4	12 27. 19	+ 0. 22	+22. 34	4 12 49. 75	− 11. 07
	δ^1 Tauri	2	28. 4	30. 6	31. 8	41. 8	42. 9	44. 3	45. 6	46. 4	56. 5	57. 8	59. 9	14 44. 18	0. 10	22. 34	4 15 6. 62	14. 69
Y.	Lacaille 1431	3	46. 4	48. 6	50. 0	0. 7	1. 8	3. 0	4. 2	5. 3	15. 9	17. 4	19. 4	17 2. 97	0. 23	22. 35	4 17 25. 55	10. 81
	ε Tauri	4	3. 2	5. 3	6. 5	16. 7	17. 9	19. 1	20. 4	21. 5	31. 4	33. 0	34. 9	20 19. 08	+ 0. 09	22. 35	4 20 41. 52	14. 88
Oct. 2	α Leonis	5	. .	. .	. .	. .	. .	. .	14. 4	16. 8	18. 1	19. 2	20. 7	1 17. 84	− 33. 87	22. 77	10 1 6. 74	11. 93
	α Ursæ Majoris	6	20. 2	24. 6	27. 1	48. 1	50. 2	53. 0	55. 6	57. 6	18. 1	20. 8	25. 2	54 52. 77	+ 0. 35	22. 75	10 55 15. 87	12. 33
	δ Leonis	7	12. 0	14. 2	15. 5	25. 9	27. 1	28. 3	29. 6	30. 7	40. 9	42. 2	44. 3	6 28. 25	0. 14	22. 75	11 6 51. 14	11. 63
3	Sun I	8	57. 7	59. 7	0. 7	10. 3	11. 5	12. 6	13. 9	14. 9	24. 4	25. 6	27. 6	35 12. 63	0. 11	22. 72	12 35 35. 46	. .
	Sun II	9	6. 3	8. 4	9. 5	19. 4	20. 4	21. 6	22. 7	23. 7	33. 2	34. 4	36. 5	37 21. 46	+ 0. 11	22. 72	12 37 44. 29	. .
	Polaris, S. P.	10	13. 0	51. 0	4. 0	33. 0	49. 0	1. 0	13. 0	33. 0	10. 0	19. 0	1. 0	10 4. 27	− 6. 73	22. 71	1 10 20. 25	137. 89
	α Bootis	11	47. 6	49. 7	51. 0	1. 3	2. 4	3. 6	4. 9	6. 0	15. 9	17. 3	19. 4	9 3. 55	+ 0. 14	22. 69	14 9 26. 38	9. 76
	α Coronæ Borealis	12	14. 9	17. 4	18. 8	29. 6	30. 6	31. 9	33. 4	34. 5	45. 2	46. 6	48. 8	28 31. 97	0. 15	22. 67	15 28 54. 79	9. 13
R.	η Geminorum	13	1. 4	3. 5	5. 1	15. 4	16. 6	17. 6	18. 8	20. 0	30. 3	31. 8	33. 9	6 17. 67	0. 10	22. 58	6 6 40. 35	14. 91
	μ Geminorum	14	5. 3	7. 6	9. 2	19. 3	20. 3	21. 6	23. 0	24. 0	34. 3	35. 8	37. 9	14 21. 66	0. 10	22. 58	6 14 44. 34	14. 89
	ν Geminorum	15	14. 7	16. 9	18. 3	28. 5	29. 7	31. 0	32. 2	34. 3	43. 3	44. 5	46. 5	20 30. 90	+ 0. 10	22. 58	6 20 53. 58	14. 56
	Moon II	16	. .	. .	. .	38. 0	39. 2	40. 4	41. 6	43. 0	53. 3	54. 8	56. 6	29 45. 86	− 5. 32	22. 58	6 30 3. 12	. .
	α Canis Majoris	17	31. 2	33. 1	34. 4	44. 3	45. 5	46. 7	47. 9	49. 0	58. 7	0. 2	2. 2	38 46. 65	+ 0. 13	22. 58	6 39 9. 36	10. 76
4	δ Geminorum	18	21. 1	23. 1	24. 4	34. 9	36. 0	37. 3	38. 7	39. 7	50. 0	51. 2	53. 4	11 37. 25	0. 10	22. 72	7 12 0. 07	14. 38
	ι Geminorum	19	36. 7	39. 0	40. 4	51. 4	52. 6	54. 0	55. 3	56. 4	7. 2	8. 5	10. 8	16 53. 85	0. 10	22. 72	7 17 16. 67	14. 95
	Moon II	20	42. 2	44. 3	45. 7	55. 9	57. 0	58. 3	59. 7	0. 8	10. 9	12. 3	14. 3	20 58. 31	0. 10	22. 72	7 21 21. 13	. .
	α^2 Geminorum	21	14. 2	16. 9	18. 3	29. 7	30. 8	32. 3	33. 8	35. 1	45. 9	47. 5	49. 0	25 32. 14	0. 10	22. 72	7 25 54. 96	15. 28
	β Geminorum	22	19. 2	21. 5	23. 2	34. 0	35. 2	36. 4	37. 9	38. 9	49. 7	51. 1	53. 3	36 36. 40	0. 10	22. 72	7 36 59. 22	14. 59
Y.	α Leonis	23	28. 7	30. 7	31. 9	41. 8	42. 8	44. 1	45. 3	46. 3	56. 1	57. 3	59. 2	0 44. 02	0. 13	22. 61	10 1 6. 76	11. 97
	δ Leonis	24	12. 2	14. 3	15. 7	25. 9	27. 0	28. 4	29. 7	30. 7	40. 8	42. 1	44. 3	6 28. 28	0. 15	22. 62	11 6 51. 05	11. 66
5	Sun I	†25	14. 1	16. 0	17. 3	27. 0	28. 1	29. 3	30. 5	31. 6	41. 1	42. 3	44. 4	42 29. 25	0. 10	22. 63	12 42 51. 98	. .
	Sun II	†26	23. 2	25. 2	26. 4	36. 1	37. 1	38. 3	39. 6	40. 6	50. 2	51. 4	53. 2	44 38. 30	+ 0. 10	22. 63	12 45 1. 03	. .
	Polaris, S. P.	27	13. 0	53. 0	5. 0	35. 0	49. 5	3. 0	13. 5	35. 0	10. 0	18. 0	1. 0	10 5. 09	− 7. 18	22. 64	1 10 20. 55	138. 18
	α Bootis	28	47. 4	49. 9	51. 0	1. 3	2. 4	3. 7	4. 9	6. 0	16. 2	17. 4	19. 6	9 3. 62	+ 0. 14	22. 65	14 9 26. 41	9. 75
	α Coronæ Borealis	29	15. 0	17. 3	18. 6	29. 5	30. 7	32. 0	33. 4	34. 5	45. 2	46. 6	48. 8	28 31. 96	+ 0. 16	22. 66	15 28 54. 78	9. 10
	* + 21° 1′	†30	. .	. .	. .	44. 1	45. 0	46. 4	47. 7	48. 8	59. 1	0. 4	2. 5	58 51. 75	− 5. 22	22. 69	18 59 9. 22	14. 46
	O. Arg. S. 19314	31	36. 2	38. 3	39. 5	50. 7	51. 8	53. 2	54. 5	55. 7	6. 4	8. 0	10. 3	7 53. 15	+ 0. 13	22. 70	19 8 15. 98	15. 35
	* − 23° 49′	32	25. 0	27. 3	28. 3	38. 9	40. 1	41. 4	42. 6	43. 7	54. 1	55. 5	57. 7	10 41. 33	0. 12	22. 70	19 11 4. 15	14. 78
	O. Arg. S. 19459	33	. .	. .	. .	42. 4	43. 6	44. 9	46. 2	47. 4	. .	. .	. .	14 44. 90	0. 08	22. 70	19 15 7. 68	15. 36
	O. Arg. S. 19465	34	. .	. .	. .	50. 1	51. 5	52. 7	54. 0	55. 0	. .	. .	. .	14 52. 66	0. 08	22. 70	19 15 15. 44	15. 36
	δ Aquilæ	35	1. 0	2. 9	4. 0	13. 7	14. 7	15. 8	17. 1	18. 2	27. 5	28. 8	30. 9	18 15. 87	0. 11	22. 70	19 18 38. 68	12. 38
	* − 23° 26′	36	52. 0	54. 3	55. 6	6. 1	7. 3	8. 5	9. 7	10. 8	21. 2	22. 6	24. 7	23 8. 44	0. 12	22. 70	19 23 31. 26	14. 77
	B. A. C. 6693	37	43. 2	45. 5	46. 9	58. 3	59. 6	0. 8	2. 3	3. 4	14. 6	16. 2	18. 6	26 0. 85	0. 13	22. 70	19 26 23. 68	15. 72
	* − 24° 40′	38	56. 9	59. 0	0. 1	9. 7	10. 8	11. 8	13. 1	14. 1	23. 9	25. 2	27. 1	29 11. 97	0. 13	22. 70	19 29 34. 80	14. 91
	* − 23° 10′	39	44. 7	46. 9	48. 2	58. 9	59. 0	1. 3	2. 6	3. 8	14. 0	15. 5	17. 8	34 1. 15	0. 12	22. 70	19 34 23. 97	14. 76
	* − 23° 10′	40	45. 8	48. 0	49. 3	59. 7	0. 9	2. 2	3. 5	4. 6	14. 9	16. 2	18. 4	36 2. 14	0. 12	22. 70	19 36 24. 96	14. 76
	* − 28° 45′	41	41. 2	43. 5	44. 8	55. 9	57. 3	58. 6	59. 8	0. 9	11. 8	13. 2	15. 5	38 58. 41	0. 13	22. 70	19 39 21. 24	15. 36
	B. A. C. 6814	42	29. 9	32. 2	33. 5	44. 0	45. 2	46. 4	47. 7	48. 9	59. 3	0. 7	2. 9	45 46. 43	0. 12	22. 70	19 46 9. 25	14. 88
	B. A. C. 6831	43	54. 5	56. 9	58. 0	8. 6	9. 7	11. 0	12. 3	13. 3	23. 7	25. 0	27. 1	48 10. 92	0. 12	22. 70	19 48 33. 74	14. 80
	Weisse 1319	44	28. 4	29. 7	31. 3	32. 5	35. 0	. .	37. 2	39. 5	40. 8	41. 9	43. 4	53 5. 97	+ 0. 38	22. 70	19 53 29. 05	13. 97
	B. A. C. 6878	45	. .	. .	. .	30. 8	32. 4	34. 5	50. 7	53. 2	54. 5	55. 6	57. 2	55 46. 11	− 27. 77	22. 70	19 55 41. 04	− 14. 76
	λ Ursæ Minoris	†46	. .	. .	. .	. .	59. 5	5. 0	8. 0	. .	. .	. .	. .	0 4. 17	+ 2. 57	22. 71	20 0 29. 45	+ 204. 01
	α^2 Capricorni	47	52. 8	55. 0	56. 1	6. 0	7. 0	8. 2	9. 4	10. 4	20. 1	21. 4	23. 6	10 8. 18	0. 12	22. 71	20 10 31. 01	− 13. 90
	B. A. C. 7111	48	7. 5	10. 2	11. 2	21. 5	22. 6	24. 0	25. 3	26. 4	36. 6	38. 1	40. 1	29 23. 95	0. 12	22. 71	20 29 46. 78	14. 74
	B. A. C. 7147	49	37. 9	40. 3	41. 5	52. 3	53. 4	54. 8	56. 1	57. 2	7. 9	9. 3	11. 6	32 54. 75	0. 13	22. 71	20 33 17. 59	15. 06
	O. Arg. S. 20802	50	24. 5	26. 6	27. 8	38. 5	39. 6	40. 9	42. 1	43. 3	53. 7	55. 1	57. 2	36 40. 85	0. 13	22. 71	20 37 3. 69	14. 85
	O. Arg. S. 20817	51	34. 4	36. 6	37. 9	. .	. .	. .	. .	. .	4. 0	5. 4	7. 5	37 50. 97	0. 17	22. 71	20 38 13. 85	14. 85
	O. Arg. S. 20819	52	. .	. .	. .	53. 0	54. 1	55. 4	56. 6	57. 6	. .	. .	. .	37 55. 34	0. 08	22. 71	20 38 18. 13	14. 84
	B. A. C. 7210	†53	16. 8	19. 0	20. 3	. .	. .	. .	. .	. .	47. 0	48. 5	50. 7	41 33. 71	+ 0. 17	+22. 71	20 41 56. 59	− 15. 15

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 2, 12. 7	+ 22. 72	− 0. 019	+ 0. 112
2, 6. 5	22. 58	+ 0. 010	. .
4, 7. 4	22. 72	0. 010	. .
5, 21. 5	+ 22. 72	+ 0. 010	+ 0. 112

25–26. Both limbs unsteady.
30. Field too dim.
46. Very unsteady.
53. Duplex, observed first and brighter.

		s.
October 2–3,	10h. to 16h. n. =	+ 0. 054.
3,	6h. to 7h.	− 0. 050.
4,	. . . . .	− 0. 050.
4–5,	10h. to 16h.	+ 0. 066.
5,	18h. to 21h.	− 0. 006.
5,	7h. to 9h.	+ 0. 150.

October 3. Night cloudy.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
5	B. A. C. 7214	1	46.1	48.5	49.6	0.6	1.8	3.1	4.5	5.5	16.3	17.6	19.8	43 3.04	+ 0.13	+22.71	20 43 25.88	— 15.16
	μ Aquarii	2	41.5	43.7	44.9	54.8	55.9	57.0	58.3	59.3	8.7	10.1	12.0	44 56.93	0.11	22.71	20 45 19.75	13.69
	δ Geminorum	3	20.7	23.2	24.4	34.6	35.8	36.9	38.3	39.5	49.6	50.8	53.0	11 36.99	0.18	22.82	7 11 59.99	14.41
	α² Geminorum	†4	14.1	16.6	18.1	29.3	30.4	31.9	33.4	34.7	45.8	47.5	49.6	25 31.95	0.23	22.82	7 25 55.00	15.31
	α Canis Minoris	5	33.0	34.9	36.2	46.0	46.9	48.1	49.3	50.3	59.8	0.9	2.9	31 48.03	0.14	22.82	7 32 10.99	12.55
	β Geminorum	†6	19.0	21.2	22.5	33.7	34.9	36.2	37.6	38.6	49.5	50.9	53.3	36 36.13	0.21	22.82	7 36 59.16	14.62
	Moon II	7	23.5	25.8	26.8	37.0	38.3	39.4	40.8	41.9	51.9	53.2	55.2	10 39.44	0.16	22.83	8 11 2.43	. .
6	Sun II	8	2.4	4.5	5.5	15.3	16.3	17.6	18.9	20.0	29.3	30.9	32.7	48 17.58	+ 0.10	22.34	12 48 40.02	64.55
	Polaris, S. P.	9	16.0	54.0	8.0	38.0	55.0	7.0	19.0	37.0	17.0	32.0	0.0	10 9.36	— 10.88	22.34	1 10 20.82	138.35
	α Bootis	10	47.7	50.2	51.3	1.5	2.5	3.7	5.1	6.2	16.2	17.7	19.8	9 3.81	+ 0.18	22.35	14 9 26.34	9.74
	β Aquarii	11	47.0	49.1	50.5	59.9	1.1	2.2	3.4	4.5	13.9	15.2	17.4	24 2.20	0.11	22.43	21 24 24.74	13.56
	Lacaille 8870	12	33.4	35.9	37.2	48.2	49.4	50.6	52.0	53.2	3.8	5.2	7.5	30 50.58	0.12	22.43	21 31 13.13	14.95
	Lacaille 8891	13	32.0	34.3	35.7	46.6	47.8	49.0	50.4	51.7	2.3	3.9	6.0	33 49.06	0.12	22.43	21 34 11.61	14.96
	θ Piscis Australis	14	5.7	8.1	9.5	20.6	22.0	23.3	24.8	26.0	37.2	38.5	40.9	39 23.33	0.12	22.43	21 39 45.88	15.17
	Lacaille 8941	15	2.0	4.1	5.4	16.0	17.2	18.3	19.7	20.8	31.3	32.6	34.8	43 18.38	0.11	22.43	21 43 40.92	14.60
	B. A. C. 7632	16	30.7	33.2	34.5	46.9	48.3	49.8	51.2	52.5	4.7	6.3	8.5	47 49.69	0.13	22.44	21 48 12.26	15.64
	Lacaille 8981	17	1.5	3.8	5.0	16.2	17.5	18.7	20.1	21.2	31.9	33.7	35.9	51 18.68	0.12	22.44	21 51 41.24	14.95
8	β Aquarii	18	47.5	49.5	50.8	0.5	1.6	2.7	3.7	4.8	14.4	15.7	17.8	24 2.64	+ 0.12	21.82	21 24 24.58	13.54
	Lacaille 8873	19	. .	. .	. .	8.9	10.7	12.9	31.2	34.2	35.4	36.9	38.5	32 26.09	— 31.20	21.82	21 32 16.71	15.51
	Lacaille 8907	20	56.7	59.1	0.2	11.3	12.4	13.8	15.2	16.3	29.1	28.6	30.8	37 13.77	+ 0.17	21.82	21 37 35.76	14.94
	Lacaille 8947	21	1.4	3.8	5.1	16.1	17.2	18.4	19.9	20.9	32.0	33.1	35.4	44 18.48	0.17	21.82	21 44 40.47	14.84
	Lacaille 8981	22	1.8	4.3	5.4	16.7	18.0	19.2	20.7	21.8	32.5	34.2	36.4	51 19.18	0.18	21.82	21 51 41.18	14.92
	Lacaille 9004	23	46.2	48.7	50.1	1.3	2.5	4.1	5.3	6.4	17.3	18.8	21.2	55 3.81	0.18	21.82	21 55 25.81	14.95
	13 Piscis Australis	24	54.7	56.9	58.4	9.4	10.8	12.0	13.5	14.5	25.6	27.1	29.4	56 12.03	0.18	21.82	21 56 34.03	14.95
	Lacaille 9038	25	14.5	16.8	17.9	28.6	29.8	31.1	32.3	33.5	43.8	45.2	47.4	1 30.99	0.16	21.82	22 1 52.97	14.52
	π Aquarii	26	44.0	46.1	47.2	56.9	67.9	59.0	0.2	1.3	10.8	11.9	14.0	17 59.03	0.11	21.81	22 18 20.95	13.33
	Lacaille 9142	27	42.7	45.0	46.3	56.8	57.8	59.1	0.5	1.5	11.9	13.2	15.2	20 59.09	0.16	21.81	22 21 21.06	14.33
	η Aquarii	28	46.1	48.3	49.5	59.1	0.0	1.3	2.4	3.5	13.2	14.2	16.2	28 1.25	0.11	21.81	22 28 23.17	13.47
	Lacaille 9195	29	3.8	5.9	7.2	18.2	19.3	20.6	22.0	23.2	33.6	35.0	37.4	30 20.56	0.17	21.81	22 30 42.54	14.44
	Lacaille 9208	†30	0.3	2.3	3.7	14.4	15.5	16.8	18.2	19.2	29.8	31.2	33.2	33 16.78	0.16	21.81	22 33 38.75	14.32
	Lacaille 9261	31	21.5	23.7	25.3	36.0	37.3	38.5	39.9	41.1	51.9	53.2	55.7	40 38.55	0.17	21.81	22 41 0.53	14.45
	λ Aquarii	32	55.1	57.2	58.5	8.1	9.2	10.3	11.6	12.7	22.2	23.3	25.3	45 10.32	0.13	21.81	22 45 32.26	13.70
	Lacaille 9315	33	45.1	47.3	48.8	59.7	0.8	2.2	3.5	4.6	15.3	16.6	18.7	50 2.06	0.17	21.81	22 50 24.04	14.31
	B. A. C. 8007	34	6.2	8.5	9.8	20.6	21.6	22.9	24.3	25.5	36.1	37.4	39.6	52 22.95	0.17	21.81	22 52 44.93	14.26
	Lacaille 9359	35	50.7	52.9	54.4	5.2	6.6	7.8	9.2	10.3	21.0	22.3	24.6	57 7.73	0.17	21.81	22 57 29.71	14.29
	γ Piscium	36	31.1	33.3	34.5	44.1	45.2	46.3	47.5	48.6	58.0	59.2	1.2	9 46.27	0.11	21.80	23 10 8.18	13.69
	γ Cephei	37	25.2	34.8	38.8	22.2	27.3	32.2	36.6	41.2	22.9	38.4	37.6	33 31.56	0.12	21.80	23 33 53.48	15.97
	O. Arg. S. 23036	38	25.9	28.4	29.5	39.7	40.7	41.9	43.2	44.5	54.2	55.5	57.5	38 41.91	0.15	21.80	23 39 3.86	13.76
	δ Sculptoris	39	12.3	14.8	16.2	27.2	28.5	29.8	31.2	32.3	42.8	44.3	46.6	41 29.64	0.18	21.80	23 41 51.62	13.92
	Moon II	†40	33.0	35.1	36.4	46.3	47.4	48.6	49.7	50.7	0.4	1.7	3.6	33 48.45	0.11	21.97	10 34 10.53	. .
	α Ursæ Majoris	41	21.2	25.5	28.1	48.9	51.0	54.0	56.5	58.8	18.9	22.0	25.9	54 53.71	0.25	21.97	10 55 15.93	12.51
	δ Leonis	42	12.9	15.0	16.4	26.6	27.8	29.2	30.4	31.5	41.6	43.1	45.1	6 29.06	0.14	21.97	11 6 51.17	11.73
	Venus II	43	14.1	16.2	17.5	27.1	28.1	29.3	30.5	31.4	40.9	42.2	44.1	46 29.04	0.11	21.96	11 46 51.11	1.98
9	Sun I	†44	53.0	55.0	56.2	5.9	6.9	8.1	9.3	10.3	19.9	21.1	23.1	57 8.07	0.11	21.95	12 57 30.13	. .
	Sun II	†45	2.3	4.4	5.5	15.2	16.4	17.6	18.8	19.7	29.2	30.5	32.5	59 17.46	+ 0.11	21.95	12 59 39.52	. .
	Polaris, S. P.	46	. .	. .	. .	33.0	53.0	4.0	14.0	34.0	. .	. .	. .	10 3.60	— 4.63	21.94	1 10 20.91	138.50
	α Bootis	47	48.3	50.5	51.7	2.0	3.1	4.4	5.7	6.8	16.8	18.2	20.3	9 4.35	+ 0.14	21.93	14 9 26.42	9.74
	α Cor. Borealis	48	15.7	18.0	19.3	30.4	31.4	32.7	34.1	35.2	45.9	47.2	49.5	28 32.67	0.15	21.92	15 28 54.74	9.05
	α Serpentis	49	56.0	58.3	59.4	9.2	10.3	11.4	12.7	13.7	23.2	24.5	26.5	37 11.38	0.12	21.91	15 37 33.41	10.93
	* — 23° 13′	50	46.6	48.9	50.1	0.5	1.7	2.9	4.3	5.4	15.8	17.1	19.1	36 2.95	0.16	21.87	19 06 24.98	14.69
	γ Aquilæ	51	10.7	12.9	14.0	23.9	24.9	26.2	27.4	28.4	37.9	39.3	41.3	39 26.08	0.10	21.87	19 39 48.05	11.76
	O. Arg. S. 20030	52	4.6	6.9	8.1	18.7	19.8	21.1	22.4	23.3	33.8	35.2	37.3	44 21.02	+ 0.16	21.86	19 44 43.04	14.73
	B. A. C. 6814	53	. .	. .	. .	0.1	1.5	3.6	20.0	22.4	23.8	25.0	26.6	46 15.38	— 28.00	21.86	19 46 9.24	14.81
	O. S. 20063	54	. .	. .	. .	36.7	37.8	38.9	40.3	41.4	. .	. .	. .	46 39.02	+ 0.11	+21.86	19 47 0.99	— 14.81

4. Unsteady.
6. Unsteady.
30. Preceded by faint companion 3′ to southward.
40. Fair observation.
44–45. Both limbs very steady.

		r.	
October 5, 21h. 0m.	Image east	0.08.	Clamp west.
8, 0h. 20m.	Image east	0.065.	Clamp west.
9, 1h. 40m.	Image east	0.17.	Clamp west.
	Image west	0.09.	Clamp east.

		s.
October 6, 12h. to 15h.	n. =	0.157.
21h. to 22h.		+ 0.020.
8, . . .		— 0.087.
8–9, Day observations		+ 0.050.
Night observations		— 0.087.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 6, 17.8	+ 22.39	+ 0.011	+ 0.112
8, 22.6	21.81	— 0.012	. .
9, 19.3	+ 21.87	— 0.012	+ 0.112

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct 9	Weisse 1319 . .	1	51.4	53.5	54.7	4.7	5.7	7.0	8.2	9.2	19.0	20.4	22.4	53 6.93	+ 0.14	+21.86	19 53 28.93	— 13.89
	Weisse 1320 . .	2	30.7	32.0	33.2	34.5	37.0	. .	39.1	41.5	42.7	43.8	45.3	53 7.98	0.40	21.86	19 53 30.24	13.89
	B. A. C. 6887 . .	3	14.1	16.5	17.9	29.0	30.2	31.6	33.0	34.1	45.0	46.5	48.8	56 31.52	+ 0.18	21.86	19 56 53.56	— 15.35
Y.	λ Ursæ Minoris . .	4	. .	. .	. .	1.0	58.5	0.0	6.0	54.0	. .	. .	. .	59 59.90	— 1.17	21.86	20 0 20.59	+ 209.15
	a^1 Capricorni . . .	5	. .	. .	. .	42.7	43.8	45.0	46.3	47.2	. .	.	. .	9 45.00	+ 0.09	21.86	20 10 6.95	— 13.82
	a^2 Capricorni . .	6	53.5	55.4	56.7	6.6	7.7	9.0	10.2	11.1	20.8	22.1	24.2	10 8.85	+ 0.14	21.86	20 10 30.85	13.83
	* — 22° 13′ . .	7	. .	. .	. .	27.6	28.9	31.1	47.2	49.8	51.0	52.3	53.8	17 42.71	— 27.57	21.86	20 17 37.00	14.62
	B. A. C. 7034 . .	8	13.6	15.9	17.2	28.0	29.0	30.4	31.8	32.8	43.5	44.9	47.0	19 30.37	+ 0.17	21.86	20 19 52.40	— 14.98
	B. A. C. 7851 . .	9	. .	. .	. .	5.0	17.5	32.5	47.0	59.0	. .	. .	. .	23 32.20	— 0.27	21.83	22 23 53.76	+ 0.30
	η Aquarii	10	46.1	48.3	49.3	59.0	0.1	1.2	2.4	3.3	13.0	14.2	16.1	28 1.18	+ 0.11	21.83	22 28 23.12	— 13.46
	Lacaille 9208 . .	11	0.0	2.5	3.7	14.3	15.5	16.6	18.0	19.2	29.5	30.8	32.9	33 16.64	+ 0.17	21.83	22 33 38.64	14.31
	Lacaille 9221 . .	12	. .	. .	. .	15.0	16.0	17.3	18.5	19.6	30.0	31.3	33.4	35 22.64	— 5.23	21.83	22 35 39.24	14.22
	Lacaille 9256 . .	†13	50.3	52.5	53.9	. .	.	. .	40.4	43.1	44.4	45.6	47.3	40 24.69	— 17.43	21.83	22 40 29.09	14.37
	21 Piscis Australis .	14	12.2	14.5	15.9	27.1	28.3	29.8	31.2	32.4	43.4	44.7	47.0	43 29.68	+ 0.18	21.83	22 43 51.69	14.51
	Lacaille 9301 . .	15	41.9	44.4	45.7	57.0	58.2	59.7	1.3	2.4	13.4	15.1	17.3	47 59.67	+ 0.19	21.83	22 48 21.69	14.56
	Lacaille 9307 . .	16	. .	. .	. .	42.7	43.9	46.3	4.0	6.8	8.3	9.7	11.4	48 59.14	— 30.19	21.83	22 48 50.78	14.56
	Lacaille 9359 . .	17	50.5	52.9	54.3	5.0	6.2	7.6	9.0	10.1	20.7	22.3	24.4	57 7.54	+ 0.17	21.83	22 57 29.54	14.28
	Weisse 1276 . .	18	37.2	39.3	40.4	50.4	51.4	52.7	53.9	54.9	4.7	6.0	7.8	0 52.61	0.13	21.83	22 1 14.57	13.79
	O. Arg. S. 22666 .	19	35.9	38.2	39.4	49.5	50.6	52.0	53.3	54.3	4.4	5.4	7.5	4 51.86	+ 0.15	21.82	23 5 13.83	13.92
	O. Arg. S. 22670 .	20	. .	. .	. .	15.2	16.5	18.7	34.4	36.7	38.0	39.1	40.5	5 29.89	— 26.86	21.82	23 5 24.85	13.92
	Lacaille 9414 . .	21	. .	. .	. .	16.0	17.4	19.6	37.1	39.6	41.1	42.4	44.2	8 32.18	— 29.65	21.82	23 8 24.35	14.28
	* — 30° 39′ . . .	22	. .	. .	. .	6.8	7.9	9.3	10.7	11.9	. .	. .	. .	9 9.32	+ 0.13	21.82	23 9 31.27	14.27
	Lacaille 9437 . .	23	. .	59.5	0.9	12.1	13.4	14.7	16.1	17.3	28.4	29.9	. .	11 14.70	+ 0.17	21.82	23 11 36.69	14.27
	B. A. C. 8132 . .	†24	. .	. .	. .	37.1	38.4	39.7	40.9	42.2	52.9	54.3	56.5	13 45.25	— 5.46	21.82	23 14 1.61	14.13
	κ Piscium	†25	21.8	24.0	25.1	34.8	35.9	37.0	38.4	39.3	48.7	49.9	51.9	19 36.98	+ 0.11	21.82	23 19 58.91	13.59
	B. A. C. 8213 . .	26	. .	. .	. .	15.0	33.0	53.0	12.0	29.0	. .	.	. .	27 52.40	— 0.37	21.82	23 28 13.85	23.16
	γ Cephei	27	25.5	34.9	39.5	22.2	27.0	32.2	37.5	41.6	23.6	29.3	38.2	33 31.95	+ 0.12	21.82	23 33 53.89	15.93
	* + 0° 20′ . . .	28	38.2	40.3	41.4	51.3	52.2	53.4	54.5	55.5	5.1	6.3	8.3	18 53.32	0.11	21.81	0 19 15.24	13.69
	Lacaille 224 . .	29	14.4	16.7	17.9	28.5	29.7	30.9	32.3	33.4	43.8	45.2	47.2	42 30.91	0.16	21.80	0 42 52.87	13.26
	Lacaille 241 . .	30	54.4	56.8	57.9	8.8	10.0	11.3	12.6	13.7	24.3	25.6	27.8	46 11.20	0.16	21.80	0 46 33.16	13.20
	Lalande 1737 . .	31	0.8	2.9	4.1	13.8	14.9	16.0	17.2	18.2	27.8	29.0	31.1	53 15.98	+ 0.10	21.80	0 53 37.88	13.97
	Weisse 944 . . .	32	. .	. .	. .	14.5	15.6	16.8	18.0	18.9	28.6	29.8	31.8	54 21.75	— 4.95	21.80	0 54 38.60	13.98
	Weisse 1023 . .	33	7.9	10.1	11.2	21.0	22.0	23.2	24.4	25.2	34.6	36.0	38.1	58 23.06	+ 0.11	21.80	0 58 44.97	13.76
	Weisse 1031 . .	34	. .	. .	. .	59.1	0.4	2.3	17.3	19.6	20.8	21.9	23.4	59 13.10	— 25.58	21.80	0 59 9.32	13.78
	Polaris	35	. .	. .	. .	32.6	16.0	2.0	50.0	33.0	. .	. .	. .	10 2.60	— 0.91	21.80	1 10 23.49	138.51
	θ Ceti	36	37.6	39.6	41.0	50.8	51.8	52.9	54.2	55.3	4.8	6.1	8.0	16 52.92	+ 0.13	21.80	1 17 14.85	13.40
	Weisse 330 . . .	37	38.9	41.1	42.3	52.0	53.1	54.5	55.6	56.5	6.0	7.2	9.1	19 54.19	+ 0.11	21.80	1 20 16.10	13.85
	Weisse 335 . . .	38	. .	. .	. .	23.8	25.2	27.2	42.1	44.4	45.6	46.7	48.2	20 37.90	— 25.61	21.80	1 20 34.09	13.84
	η Piscium	39	36.7	38.9	40.0	50.0	51.1	52.3	53.5	54.5	4.4	5.7	7.7	23 52.25	+ 0.09	21.80	1 24 14.14	14.34
11	δ Leonis	40	13.5	15.8	17.1	27.4	28.5	29.8	31.0	32.2	42.4	43.6	45.8	6 29.74	0.14	21.38	11 7 51.26	11.78
	β Leonis	41	29.1	31.3	32.5	42.4	43.5	44.8	46.0	47.0	46.8	58.2	0.3	41 44.72	0.13	21.38	11 42 6.23	11.20
	Venus II . . .	42	23.9	25.9	27.1	36.9	37.8	39.0	40.3	41.1	50.8	52.0	53.9	43 38.97	+ 0.11	21.38	11 44 0.46	1.91
12	Polaris, S. P. . .	43	16.0	51.0	8.0	. .	. .	. .	. .	.	. .	. .	. .	19 5.00	— 9 4.84	21.37	1 10 21.53	128.72
	α Bootis	44	48.9	50.9	52.2	2.4	3.5	4.9	6.1	7.1	17.3	18.5	20.7	9 4.77	+ 0.14	21.36	14 9 26.27	9.73
	α Cor. Borealis . .	45	16.2	18.6	19.9	30.8	32.0	33.3	34.6	35.7	45.1	47.9	50.0	28 33.19	0.15	21.35	15 28 54.69	9.01
	α Herculis	46	49.3	51.4	52.5	2.5	3.5	4.9	6.0	7.1	17.0	18.3	20.3	8 4.80	0.13	21.34	17 8 26.27	— 10.37
	δ Ursæ Minoris . .	†47	26.0	46.3	7.7	29.5	11.3	. .	. .	. .	. .	. .	. .	6 12.16	+ 9 32.02	21.32	18 16 5.50	+ 84.34
N.	λ Ursæ Minoris . .	48	. .	. .	. .	4.0	56.0	59.0	3.0	56.0	. .	. .	. .	59 59.60	— 2.49	. .	. . . .	+ 212.63
Y.	Lacaille 9005 . .	49	45.6	48.1	49.4	0.2	1.5	2.8	4.1	5.2	16.0	17.5	19.6	55 2.73	+ 0.18	21.51	21 55 24.42	— 14.71
	α Aquarii	†50	12.4	14.4	15.6	25.0	25.9	27.2	28.5	29.5	38.7	40.0	42.2	58 27.22	+ 0.11	21.51	21 58 48.84	13.32
	O. Arg. S. 21910 .	51	. .	. .	. .	30.0	31.3	33.4	49.8	52.3	53.7	55.0	56.5	0 45.25	— 28.00	21.51	22 0 38.76	14.47
	Lacaille 9038 . .	52	14.9	17.1	18.4	28.8	29.8	31.2	32.6	33.7	44.0	45.7	47.6	1 31.25	+ 0.18	21.51	22 1 52.94	14.46
	B. A. C. 7745 . .	53	. .	. .	. .	57.8	59.1	1.5	18.0	20.6	22.0	23.2	24.8	6 13.38	— 28.35	21.51	22 6 6.54	14.53
	Weisse 303 . . .	†54	59.8	1.8	2.9	12.6	13.7	14.8	15.7	16.8	26.4	27.7	29.6	15 14.71	+ 0.11	+21.51	22 15 36.33	— 13.26

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 12, 13.9	+ 21.36	— 0.008	+ 0.112
23.6	+ 21.52	+ 0.005	. .

13. Through clouds.
24. Through clouds.
25. Through clouds.
47. Steady.
50. Unsteady.
54. Southward and following.

October 12. Stars generally unsteady.

			s.
October 11–12,	11h. to 18h.	n. =	+ 0.050.
	20h. to 0h.		— 0.120.
	0h. to 2h.		— 0.200.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
12	π Aquarii	1	. .	46.5	47.5	57.1	58.1	59.3	0.4	1.6	11.0	12.4	. .	17 59.32	+ 0.10	+21.51	22 18 20.93	— 13.33
	β Piscis Australis	2	7.2	9.8	10.9	22.6	23.8	25.2	26.7	27.8	39.3	40.8	43.0	23 25.19	+ 0.21	21.51	22 23 46.91	14.82
	* — 33° 1′	3	. .	. .	. .	. .	. .	. .	1.2	4.0	5.2	6.8	8.4	24 5.12	— 39.33	21.51	22 23 47.30	14.82
	Weisse 602	4	52.1	54.4	55.5	5.2	6.2	7.4	8.6	9.7	19.4	20.6	22.7	29 7.44	+ 0.14	21.51	22 29 29.09	13.77
	Weisse 619	5	. .	29.8	30.9	40.9	42.0	43.1	44.2	45.3	55.0	56.1	. .	29 43.04	0.13	21.51	22 30 4.68	13.77
	α Piscis Australis	6	29.8	32.0	33.4	44.9	45.9	47.3	48.7	50.0	0.9	2.3	4.6	49 47.25	0.20	21.52	22 50 8.97	14.53
	Lalande 45137	7	24.6	26.6	27.8	38.1	39.2	40.3	41.6	42.7	52.6	54.0	56.0	57 40.32	0.16	21.52	22 58 2.00	13.93
	Lacaille 9379	8	56.6	59.0	0.4	11.2	12.3	13.6	15.0	16.0	26.6	28.1	30.3	1 13.55	0.19	21.52	23 1 35.26	14.18
	O. Arg. S. 22666	9	14.0	15.2	16.4	17.8	20.7	. .	23.6	26.0	27.2	28.4	29.9	4 51.92	0.42	21.52	23 5 13.86	13.90
	O. Arg. S. 22670	10	47.5	49.6	50.8	1.1	2.1	3.3	4.5	5.6	15.7	16.9	18.9	5 3.27	+ 0.16	21.52	23 5 24.95	13.90
	Lacaille 9414	11	. .	. .	. .	16.1	17.7	20.1	37.3	40.0	41.4	42.7	44.1	8 32.42	— 29.63	21.52	23 8 24.31	14.25
	γ Sculptoris	12	49.6	52.1	53.5	5.3	6.4	7.9	9.4	10.5	22.0	23.5	25.6	11 7.80	+ 0.21	21.52	23 11 29.53	14.32
	B. A. C. 8132	13	23.0	25.3	26.5	37.5	38.5	39.7	41.2	42.4	53.0	54.6	56.8	13 39.86	0.19	21.52	23 14 1.57	14.11
	Lacaille 9458	14	48.8	51.3	52.6	4.0	5.3	6.7	8.0	9.1	20.4	21.8	24.4	16 6.56	0.21	21.52	23 16 28.29	14.21
	Lacaille 9473	15	20.2	22.5	23.8	34.8	36.0	37.5	38.8	40.0	50.9	52.3	54.4	18 37.38	0.19	21.52	23 18 59.09	14.08
	Lacaille 9499	16	52.5	54.9	56.1	6.8	7.9	9.3	10.7	11.7	22.1	23.5	25.7	23 9.20	+ 0.18	21.52	23 23 30.90	13.96
	B. A. C. 8213	†17	. .	. .	. .	18.0	35.0	55.0	15.5	32.5	. .	. .	. .	27 55.20	— 0.92	21.52	23 28 15.80	22.79
	ι Piscium	†18	21.8	23.9	25.1	34.5	35.7	37.0	38.2	39.2	48.7	49.8	51.9	32 36.89	+ 0.10	21.52	23 32 58.51	13.69
	Lacaille 9568	19	17.3	19.6	20.9	32.0	33.3	34.7	36.0	37.2	48.2	49.4	51.8	35 34.58	0.20	21.52	23 35 56.30	13.94
	21 Piscium	20	54.3	56.4	57.5	7.2	8.2	. .	10.5	11.5	21.0	22.4	24.3	42 9.33	0.11	21.52	23 42 30.96	13.62
	O Arg. S. 23120	21	1.1	3.2	4.6	15.1	16.3	17.6	18.9	20.0	30.4	31.6	33.9	47 17.52	0.18	21.52	23 47 39.22	13.75
	ω Piscium	†22	44.3	. .	47.6	57.2	58.3	59.6	0.8	1.7	11.1	. .	14.2	51 59.42	0.10	21.52	23 52 21.04	13.70
	Lalande 1737	23	1.2	3.1	4.3	14.2	15.2	16.4	17.6	18.6	28.1	29.4	31.5	53 16.33	0.08	21.52	0 53 37.93	13.98
	Weisse 944	24	2.0	4.0	5.3	15.0	15.9	17.0	18.3	19.4	29.0	30.5	32.4	54 17.16	0.08	21.52	0 54 38.76	13.99
	O. Arg. S. 636	25	59.7	1.9	3.2	14.2	15.3	16.5	17.8	18.9	29.6	30.7	33.0	0 16.44	+ 0.22	21.52	1 0 38.18	13.06
	Polaris	26	. .	. .	. .	33.0	16.5	6.0	53.0	37.0	. .	. .	. .	10 5.10	— 5.48	21.52	1 10 21.14	138.78
	θ Ceti	†27	38.0	40.3	41.4	51.2	52.2	53.4	54.6	55.7	5.4	6.7	8.3	16 53.38	+ 0.14	21.52	1 17 15.04	13.42
	Lacaille 407	28	52.1	54.2	55.5	5.9	7.1	8.3	9.7	10.7	21.1	22.3	24.4	21 8.30	0.21	21.52	1 21 30.03	12.95
	η Piscium	†29	36.8	39.1	40.2	50.3	51.3	52.6	53.9	54.8	4.7	5.8	7.9	23 52.49	0.06	21.53	1 24 14.08	14.37
13	Sun I	30	38.8	40.8	42.2	51.5	52.6	53.8	54.9	56.1	5.7	7.1	9.1	11 53.87	0.12	21.32	13 12 15.31	. .
	Sun II	31	48.8	50.7	52.1	2.0	3.0	4.1	5.2	6.3	15.9	17.1	19.2	14 4.04	0.12	21.32	13 14 25.48	. .
	B. A. C. 7745	32	28.7	30.9	32.3	42.7	44.1	45.4	46.8	47.7	58.4	59.6	2.0	5 45.33	0.14	21.18	22 6 6.65	14.52
	θ Aquarii	33	3.8	5.8	7.2	16.8	17.9	19.0	20.2	21.3	30.9	32.1	34.1	9 19.01	0.12	21.18	22 9 40.31	13.68
	Lacaille 9113	34	. .	. .	. .	12.2	13.2	14.5	16.0	16.9	. .	. .	. .	15 14.56	0.09	21.18	22 15 35.83	14.50
	Lacaille 9144	35	10.1	12.3	13.8	24.9	26.0	27.3	28.7	30.0	40.8	42.1	44.5	21 27.32	0.14	21.18	22 21 48.64	14.61
	Lacaille 9172	36	45.1	47.5	48.9	0.4	1.5	2.9	4.5	5.5	16.8	18.4	20.6	26 2.92	0.15	21.18	22 26 24.25	14.77
	B. A. C. 7891	37	32.2	34.6	36.1	. .	. .	. .	. .	. .	2.8	4.2	6.4	31 49.38	0.19	21.18	22 32 10.75	14.51
	O. Arg. S. 22316	38	. .	. .	. .	49.3	50.5	51.9	53.2	54.2	. .	. .	. .	31 51.82	0.09	21.18	22 32 13.09	14.51
	Lacaille 9261	†39	22.1	24.5	25.7	36.6	37.9	39.2	40.7	41.9	52.6	54.0	56.2	40 39.22	0.14	21.17	22 41 0.53	14.40
	λ Aquarii	40	55.8	57.9	59.0	8.9	9.9	11.0	12.0	13.1	22.9	24.1	26.2	45 10.98	0.12	21.17	22 45 32.27	13.66
	B. A. C. 8007	41	7.0	9.1	10.4	21.0	22.3	23.6	25.0	26.1	. .	. .	. .	52 18.06	5.65	21.17	22 52 44.88	14.21
	Lacaille 9361	42	19.9	22.1	23.4	34.0	35.0	36.3	37.7	38.9	49.5	50.8	53.0	57 36.42	0.14	21.17	22 57 57.73	14.15
	Lacaille 9379	43	57.2	59.5	0.9	11.7	12.7	14.0	15.2	16.6	27.3	28.5	30.7	1 14.03	0.14	21.17	23 1 35.34	14.17
	γ Piscium	44	31.8	33.7	34.9	44.4	45.7	46.8	48.0	49.1	58.6	59.9	1.9	9 46.79	0.11	21.17	23 10 8.07	13.67
	Lacaille 9462	45	17.6	19.8	21.0	31.6	32.6	33.9	35.2	36.2	46.7	48.0	50.1	16 33.88	0.13	21.17	23 16 55.18	13.94
	Lacaille 9479	46	14.3	16.5	17.8	28.4	29.4	30.7	32.0	33.1	43.3	44.7	47.0	19 30.65	0.13	21.17	23 19 51.95	13.95
	Lacaille 9499	47	53.1	55.3	56.7	7.3	8.5	9.8	11.0	12.1	22.6	23.9	26.1	23 9.67	0.14	21.16	23 23 30.97	13.95
	γ Cephei	48	26.2	34.6	40.2	22.1	27.0	32.8	37.5	41.5	23.4	29.4	38.0	33 32.06	0.37	21.16	23 33 53.59	15.83
	O. Arg. S. 23036	49	26.6	28.8	30.1	40.1	41.2	42.4	43.7	44.7	54.7	56.1	58.2	38 42.42	0.13	21.16	23 39 3.71	13.74
	δ Sculptoris	50	13.0	15.3	16.8	27.8	29.0	30.3	31.6	32.8	43.7	45.0	47.4	41 30.24	0.14	21.16	23 41 51.54	13.89
	δ Leonis	51	13.7	15.9	17.2	27.5	28.6	29.9	31.2	32.2	42.3	43.7	45.9	6 29.83	0.13	21.35	11 6 51.31	11.88
	Venus II	52	36.3	38.4	39.5	49.1	50.3	51.5	52.8	53.7	3.2	4.5	6.5	41 51.44	+ 0.11	21.35	11 42 12.90	1.79
	Polaris, S. P.	53	16.0	54.0	4.5	34.5	53.0	4.0	16.0	33.5	12.0	18.0	0.0	10 5.95	— 5.35	+21.36	1 10 21.96	— 139.41

17-18. Unsteady.
22. Very unsteady.
27. Unsteady.
29. Unsteady.
39. Through clouds.
October 13. Stars faint.

October 13. 0h. 0m. Image $\overset{r.}{0.00}$. Clamp west.

October 13, n. = — $\overset{s.}{0.028}$.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 13, 23.0	+ 21.17	— 0.015	+ 0.112

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Oct. 17	α Bootis	†1	48.8	51.1	52.3	2.6	3.7	5.0	6.3	7.3	17.5	18.8	20.8	9 4.93	+ 0.13	+21.36	14 9 26.42	− 9.73
	α Cor. Borealis	2	16.2	18.5	19.7	30.7	31.9	33.2	34.5	35.7	46.3	47.7	49.9	28 33.12	0.14	21.36	15 28 54.62	8.97
	α Serpentis	3	. .	58.7	59.9	9.7	10.6	11.8	13.0	14.1	23.6	25.0	. .	37 11.82	0.11	21.36	15 37 33.29	10.87
Y.	α Herculis	4	49.2	51.3	52.4	2.5	3.6	4.8	6.0	7.0	16.8	18.1	20.1	8 4.71	0.12	21.37	17 8 26.20	10.29
	α Ophiuchi	5	59.9	2.0	3.1	13.1	14.3	15.5	16.7	17.6	27.4	28.6	30.6	28 15.35	0.12	21.37	17 28 36.84	− 10.58
	Moon I	6	15.8	17.1	18.6	20.0	22.6	. .	29.0	31.6	32.9	34.1	35.8	51 55.93	0.24	21.37	17 52 17.54	. .
		7	39.5	41.6	43.0	53.7	55.0	56.2	57.6	58.5	9.0	10.4	12.5					
	δ Ursæ Minoris	†8	23.5	46.0	7.7	29.0	9.0	. .	. .	. .	. .	. .	. .	6 11.04	9 31.51	21.37	18 16 3.92	+ 86.47
	α Aquarii	9	12.3	14.3	15.4	25.0	26.2	27.3	28.5	29.5	39.0	40.4	42.2	58 27.28	0.11	21.38	21 58 48.77	− 13.26
	Lacaille 9038	10	14.8	17.0	18.3	29.0	30.1	31.4	32.6	33.6	44.1	45.6	47.7	1 31.29	0.15	21.38	22 1 52.82	14.40
	Lacaille 9058	11	39.7	42.1	43.4	54.3	55.5	56.8	58.0	59.2	9.9	11.2	13.4	5 56.68	0.15	21.38	22 6 18.21	14.53
	Lacaille 9097	12	0.5	3.0	4.2	15.4	16.5	17.8	19.2	20.4	31.1	32.7	34.8	11 17.78	0.16	21.38	22 11 39.32	14.60
	π Aquarii	13	44.3	46.4	47.5	57.2	58.2	59.4	0.6	1.6	11.0	12.4	14.3	18 59.35	0.11	21.38	22 19 20.84	13.28
	Lalande 44373	14	14.5	16.6	17.8	27.8	28.8	29.9	31.1	32.1	41.9	43.1	45.1	34 29.88	0.12	21.38	22 34 51.38	13.71
	65 Aquarii	15	16.0	18.1	19.2	29.2	30.2	31.4	32.6	33.6	43.2	44.6	46.6	35 31.34	0.12	21.38	22 35 52.84	13.71
	Lacaille 9256	16	50.7	53.0	54.2	5.1	6.3	7.5	8.8	9.9	20.6	22.0	24.2	40 7.48	0.15	21.38	22 40 29.01	14.29
	21 Piscis Australis	17	12.7	15.0	16.3	27.6	28.8	30.2	31.5	32.6	43.6	45.1	47.5	43 30.08	0.16	21.38	22 43 51.62	14.42
	Lacaille 9299	18	56.9	59.2	0.5	11.0	12.1	13.4	14.6	15.6	26.0	27.3	29.5	47 13.28	0.14	21.38	22 47 34.80	14.10
	B. A. C. 7998	19	20.9	23.6	24.9	37.1	38.4	39.8	41.2	42.4	54.3	55.9	58.3	50 39.71	0.17	21.38	22 51 1.26	14.64
	Lacaille 9343	20	20.4	23.0	24.4	36.6	37.8	39.4	40.8	42.1	54.0	55.4	58.0	54 39.26	0.17	21.38	22 55 0.81	14.63
	Lacaille 9359	21	50.9	53.3	54.5	5.5	6.6	7.9	9.3	10.4	21.3	22.7	25.0	57 7.95	0.15	21.38	22 57 29.48	14.21
	Lacaille 9373	22	55.4	57.8	59.1	10.4	11.6	13.0	14.3	15.4	26.6	28.0	30.2	59 12.89	0.16	21.38	22 59 34.43	14.30
	B. A. C. 8064	23	45.9	48.2	49.5	0.7	1.7	3.1	4.5	5.6	16.4	18.0	20.2	2 3.07	0.16	21.38	23 2 24.61	14.20
	O. Arg. S. 22666	24	36.4	38.6	39.8	50.0	51.1	52.3	53.5	54.6	4.7	5.9	8.0	4 52.26	+ 0.13	21.38	23 5 13.77	13.86
	O. Arg. S. 22670	25	. .	. .	. .	. .	. .	. .	34.7	37.4	38.5	39.7	41.2	5 38.30	− 34.75	21.38	23 5 24.93	13.86
	Lacaille 9411	26	. .	. .	. .	40.7	41.7	43.1	44.4	45.5	. .	. .	. .	7 43.08	+ 0.10	21.38	23 8 4.56	14.05
	γ Piscium	27	31.6	33.7	34.8	44.5	45.6	46.8	47.9	48.9	58.4	59.6	1.6	9 46.67	0.11	21.38	23 10 8.16	13.64
	Lacaille 9447	28	12.7	15.0	16.3	26.9	27.9	29.2	30.4	31.5	41.9	43.3	45.5	12 29.15	0.14	21.38	23 12 50.67	13.96
	Lacaille 9458	29	49.1	51.5	52.9	4.2	5.5	6.8	8.2	9.4	20.6	22.0	24.4	16 6.78	0.16	21.38	23 16 28.32	14.17
	Lacaille 9473	30	20.5	22.8	24.1	35.1	36.2	37.7	39.0	40.1	50.8	52.2	54.5	18 37.55	0.15	21.38	23 18 59.08	14.04
	Lacaille 9489	31	37.0	39.3	40.5	51.4	52.5	53.9	55.2	56.3	6.8	8.3	10.4	20 53.78	0.15	21.38	23 21 15.31	13.97
	Lacaille 9496	32	36.7	39.1	40.7	53.0	54.2	55.8	57.3	58.5	10.4	12.2	14.5	22 55.66	0.18	21.38	23 23 17.22	14.27
	β Sculptoris	33	0.7	3.4	4.8	17.2	18.3	19.8	21.4	22.8	34.8	36.5	38.9	25 19.87	0.18	21.38	23 25 41.43	14.27
	Lacaille 9524	34	0.8	3.3	4.8	16.8	18.0	19.4	21.0	22.2	33.9	35.4	37.9	27 19.41	0.18	21.38	23 27 40.97	14.15
	Lacaille 9534	†35	15.4	17.8	19.3	30.7	32.1	33.4	34.8	36.0	47.3	48.6	51.0	29 33.31	0.16	21.38	23 29 54.85	14.04
	Lacaille 9567	36	17.4	20.1	21.4	33.6	34.9	36.5	38.0	39.2	51.1	52.7	55.2	35 36.37	0.18	21.38	23 35 57.93	14.08
	Lacaille 9583	37	10.8	13.6	15.0	27.4	28.8	30.2	31.6	33.0	45.0	46.7	49.3	38 30.13	+ 0.18	21.38	23 38 51.69	14.07
	Lacaille 9597	38	. .	. .	. .	. .	. .	. .	40.7	43.4	44.9	46.5	48.5	40 44.80	− 42.39	21.38	23 40 23.79	14.05
	Lacaille 9611	39	31.2	33.4	. .	46.1	47.4	48.8	50.0	51.2	. .	3.6	5.8	42 48.61	+ 0.14	21.38	23 43 10.13	13.84
	Lacaille 9636	40	3.7	6.0	7.3	18.5	19.7	21.1	22.5	23.8	34.6	36.1	38.4	46 21.06	0.16	21.38	23 46 42.60	13.79
	Lacaille 9652	41	30.1	32.3	33.4	44.1	45.2	46.5	47.8	48.9	59.2	0.5	2.6	48 46.42	0.14	21.38	23 49 7.94	13.70
	* — 30° 17′	42	. .	. .	. .	18.0	19.2	20.5	21.8	23.1	. .	. .	. .	51 20.52	0.11	21.38	23 51 42.01	13.75
	B. A. C. 8332	43	50.5	52.9	54.2	5.4	6.6	8.0	9.4	10.5	21.5	22.8	25.2	52 7.91	0.16	21.38	23 52 29.45	13.74
	ζ Sculptoris	44	43.6	46.1	47.4	58.6	59.8	1.0	2.5	3.7	14.7	16.0	18.4	55 1.07	0.16	21.38	23 55 22.61	13.72
	Lacaille 9706	45	.	. .	. .	59.7	0.8	2.2	3.6	4.6	. .	. .	. .	57 2.18	+ 0.11	21.38	23 57 23.67	13.69
	Lacaille 9707	46	. .	. .	. .	18.4	19.8	22.1	39.5	42.1	43.6	44.8	46.4	57 34.59	− 29.53	21.38	23 57 26.44	13.69
	Lacaille 9732	47	. .	15.3	16.5	27.0	28.2	29.5	30.7	31.9	42.2	43.6	. .	0 29.43	+ 0.13	21.38	0 0 50.94	13.62
	γ Pegasi	48	38.7	40.6	41.9	52.0	52.9	54.1	55.4	56.4	6.2	7.5	9.4	5 54.10	0.09	21.38	0 6 15.57	− 13.84
	B. A. C. 4165, S. P.	49	. .	. .	. .	25.0	46.0	2.5	18.0	41.0	. .	. .	. .	13 2.50	1.31	21.38	12 13 25.19	+ 54.45
	O. Arg. S. 202	50	9.9	12.2	13.3	23.6	24.8	26.1	27.3	28.4	38.6	40.0	42.0	20 26.02	0.16	21.38	0 20 47.56	− 13.48
	12 Ceti	51	30.6	32.7	33.9	43.6	44.7	45.9	47.1	48.0	57.6	58.8	0.8	22 45.79	0.12	21.38	0 23 7.29	13.63
	Lacaille 118	52	56.7	58.9	0.2	11.0	12.1	13.4	14.7	15.7	26.3	27.7	30.0	25 13.34	0.17	21.38	0 25 34.89	13.41
	Lacaille 142	53	44.1	46.4	47.6	58.2	59.3	0.6	1.9	2.9	13.4	14.7	16.8	29 0.54	0.16	21.38	0 29 22.08	13.39
	Lacaille 157	54	26.6	28.9	30.3	41.0	42.2	43.4	44.8	45.9	56.5	57.8	0.0	31 43.40	0.17	21.38	0 32 4.95	13.34
	O. Arg. S. 388	55	4.8	7.1	8.5	19.3	20.5	21.7	23.2	24.2	35.0	36.4	38.5	37 21.75	+ 0.17	+21.38	0 37 43.30	− 13.27

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 17, 19.4	+ 21.37	+ 0.002	+ 0.112

1. While observing the sun shone on the east pier.
8. Steady.
35. Poor observation.

October 17, 2h. Image east 0.27r. Clamp west.
Image east 0.02. Clamp east.
Stars steady during the night.

October 16–17, 11h. to 19h. n. = + 0.020s.
17, 7h. to 14h. — 0.050.
0h. to 2h. — 0.100.

TE.		OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI	Mean.	Inst.	Clock.		
63.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
t. 17		Polaris	†1	22.0	16.0	8.5	57.5	36.5	. .	11.5	44.0	36.0	20.5	18.0	10 0.23	+ 0.49	+21.38	1 10 22.10	− 139.41
			†2	51.0	13.0	0.0	32.5	15.0	2.0	51.0	32.0	54.0	47.0	5.0					
		* — 27° 4′	3	. .	. .	. .	52.1	53.3	54.6	56.0	57.1	. .	. .	. .	38 54.62	0.13	21.38	1 39 16.13	13.32
Y.		Weisse 767	4	3.9	6.0	7.2	17.1	18.2	19.3	20.5	21.6	31.3	32.4	34.4	43 19.26	0.10	21.38	1 43 40.74	14.04
	β	Arietis	5	32.2	34.3	35.6	45.8	47.0	48.2	49.5	50.5	0.7	2.0	4.2	46 48.18	0.08	21.38	1 47 9.64	14.88
18	α	Lyræ	6	39.1	41.9	43.2	55.5	56.8	58.4	0.0	1.2	13.3	14.9	17.4	31 58.34	0.17	21.21	18 32 19.72	7.78
R.	β	Lyræ	7	24.0	26.3	27.7	39.4	40.6	42.0	43.5	44.7	56.0	57.5	59.9	44 41.96	0.15	21.21	18 45 3.32	8.66
	σ	Sagittarii	8	11.7	13.8	15.3	25.9	27.1	28.4	29.7	30.9	41.5	43.0	45.1	46 28.40	0.11	21.21	18 46 49.72	14.79
		Moon I	9	33.7	36.1	37.3	48.0	49.1	50.2	51.6	52.7	3.1	4.4	6.7	53 50.26	0.13	21.21	18 54 11.60	. .
	τ	Sagittarii	10	48.4	50.9	52.0	3.0	4.2	5.6	7.0	8.1	18.8	20.0	22.5	58 5.52	0.11	21.21	18 58 26.84	14.99
	π	Sagittarii	11	2.9	5.2	6.4	16.8	17.9	19.2	20.5	21.6	31.7	33.0	35.2	1 19.13	0.11	21.21	19 1 40.45	14.28
	ρ¹	Sagittarii	12	9.9	12.0	13.3	23.4	24.5	25.8	27.1	28.1	38.1	39.3	41.4	13 25.72	+ 0.11	21.21	19 13 47.04	13.97
	δ	Aquilæ	13	. .	. .	. .	28.9	30.1	32.2	47.2	49.4	50.6	51.7	53.1	18 42.90	— 25.60	21.21	19 18 38.51	— 12.16
	λ	Ursæ Minoris	14	47.0	53.0	3.0	9.0	16.0	. .	. .	. .	. .	. .	. .	30 13.60	+ 29 38.34	21.20	20 0 13.14	+ 220.28
		Polaris, S. P.	15	14.0	. .	4.5	34.0	50.0	3.0	15.0	32.5	12.0	. .	0.0	10 5.00	— 3.92	20.83	1 10 21.91	— 139.47
19		Sun I	†16	2.8	4.8	5.9	15.8	16.9	18.1	19.4	20.3	29.8	31.2	33.2	34 18.02	+ 0.12	20.83	13 34 38.97	. .
Y.		Sun II	†17	13.6	15.7	16.9	26.7	27.8	29.0	30.2	31.3	40.9	42.2	44.2	36 28.95	0.12	20.83	13 36 49.90	. .
	α	Cor. Borealis	18	16.7	19.0	20.3	31.2	32.4	33.7	35.0	36.1	46.9	48.3	50.5	28 33.65	0.12	20.82	15 28 54.59	8.95
	α	Serpentis	19	57.1	59.2	0.4	10.1	11.2	12.4	13.6	14.6	24.1	25.4	27.4	37 12.32	0.11	20.82	15 37 33.25	10.85
	α	Ophiuchi	20	0.5	2.7	3.8	13.7	14.7	16.0	17.3	18.2	28.0	29.3	31.2	28 15.81	0.11	20.82	17 28 36.74	10.55
		O. Arg. S. 20030	21	5.2	7.6	8.8	19.5	20.5	21.9	23.2	24.2	34.6	36.0	38.3	44 21.80	0.21	20.82	19 44 42.83	14.54
	β	Aquilæ	22	2.1	4.3	5.4	14.9	16.0	17.2	18.3	19.4	28.9	38.3	32.2	48 17.18	0.09	20.82	19 48 38.09	— 12.00
		Moon I	23	0.7	2.8	4.0	14.5	15.7	16.7	18.0	19.2	29.4	30.8	33.0	54 16.80	+ 0.18	20.82	19 54 37.80	. .
	λ	Ursæ Minoris	†24	. .	. .	. .	58.0	54.0	2.0	5.0	54.0	. .	. .	. .	59 58.60	— 7.10	20.82	20 0 12.32	+ 221.70
	α²	Capricorni	25	54.3	56.4	57.6	7.5	8.7	9.9	11.0	12.0	21.7	23.1	25.1	10 9.76	+ 0.16	20.82	20 10 30.74	— 13.66
		Lacaille 8414	26	. .	. .	. .	13.4	14.7	16.0	17.4	18.5	29.9	31.4	33.6	12 21.86	— 5.68	20.82	20 12 37.00	15.54
		O. Arg. S. 20443	27	0.5	2.8	3.9	14.5	15.6	16.9	18.2	19.1	29.6	30.9	33.1	14 16.83	+ 0.21	20.82	20 14 37.86	14.50
		* — 22° 13′	28	59.6	1.9	3.2	13.6	14.6	15.9	17.1	18.1	28.5	29.7	31.9	17 15.83	0.20	20.82	20 17 36.85	14.44
		B. A. C. 7034	29	14.3	16.7	17.8	28.8	30.0	31.2	32.4	33.5	44.2	45.6	47.9	19 31.13	+ 0.22	20.82	20 19 52.17	14.80
	ρ	Capricorni	30	. .	. .	. .	57.8	59.2	1.0	16.8	19.2	20.5	21.7	23.2	21 12.42	— 26.86	20.82	20 21 6.38	14.08
		O. Arg. S. 20575	31	. .	. .	. .	40.8	41.8	43.2	44.6	45.7	. .	. .	. .	23 43.22	+ 0.19	20.82	20 24 4.23	15.08
		B. A. C. 7071	32	. .	. .	. .	1.0	2.4	3.8	5.1	6.2	. .	. .	. .	24 3.70	0.19	20.82	20 24 24.71	15.08
		B. A. C. 7111	33	9.2	11.4	12.7	23.1	24.3	25.6	26.9	27.9	38.3	39.6	41.7	29 25.52	0.21	20.82	20 29 46.55	14.50
		* — 26° 3′	34	39.5	41.6	43.1	53.9	55.0	56.4	57.6	58.8	9.4	10.8	13.0	32 56.28	+ 0.22	20.82	20 33 17.32	14.77
		Lacaille 8539	35	. .	. .	. .	15.2	16.4	17.7	19.3	20.5	31.7	33.2	35.6	35 23.70	— 5.64	20.82	20 35 38.88	15.38
		O. Arg. S. 20802	36	. .	. .	. .	. .	. .	. .	15.3	17.4	18.9	20.2	21.7	37 18.70	— 36.14	20.82	20 37 3.38	14.61
		O. Arg. S. 20819	37	40.2	42.5	43.8	54.4	55.5	56.8	58.1	59.2	9.7	11.2	13.2	37 56.78	+ 0.21	20.82	20 38 17.81	14.60
		Lacaille 8585	38	37.5	39.8	41.1	52.6	53.8	55.1	56.6	57.9	9.2	10.5	12.8	41 55.17	0.26	20.82	20 42 16.25	15.34
		Lacaille 8608	39	10.5	13.1	14.4	25.8	27.0	28.4	29.7	31.0	42.2	43.8	45.9	44 28.35	0.26	20.82	20 44 49.43	15.30
		Lacaille 8619	40	50.4	52.6	54.1	5.5	6.8	8.3	9.6	10.9	21.9	23.4	25.7	47 8.11	0.26	20.82	20 47 29.19	15.30
		* — 32° 2′	41	30.0	31.6	33.0	34.5	37.4	. .	48.2	50.9	52.3	53.7	55.5	47 12.69	0.55	20.82	20 47 34.06	15.30
		Lacaille 8736	42	12.5	15.1	16.3	27.6	28.7	30.0	31.4	32.5	43.5	45.0	47.4	5 30.00	0.24	20.82	21 5 51.06	15.05
	4	Piscis Australis	43	2.6	5.1	6.5	18.0	19.2	20.6	22.0	23.0	34.4	35.9	38.2	9 20.50	0.26	20.82	21 9 41.58	15.26
		Lacaille 8787	44	6.4	8.6	10.0	21.3	22.4	23.8	25.3	26.5	37.3	38.9	41.1	13 23.78	0.24	20.82	21 13 44.84	14.97
	1	Pegasi	45	11.7	13.8	15.1	25.4	26.6	27.7	28.9	30.9	40.0	41.4	43.3	15 27.71	0.05	20.82	21 15 48.58	11.83
		* — 19° 54′	46	58.0	0.1	1.3	11.7	12.7	14.1	15.3	16.3	26.5	27.8	29.9	19 13.97	+ 0.19	20.82	21 19 34.98	14.21
		Lacaille 8827	47	. .	. .	. .	. .	. .	. .	41.3	44.3	45.8	47.2	49.3	21 45.58	— 41.95	20.82	21 21 24.45	15.70
	β	Aquarii	48	48.5	50.6	51.6	1.4	2.5	3.7	4.8	5.8	15.5	16.6	18.7	24 3.61	+ 0.13	20.82	21 24 24.56	13.39
		Lacaille 8965	49	21.5	23.8	25.2	36.5	37.7	39.0	40.4	41.4	52.9	54.3	56.4	47 39.01	0.25	20.82	21 48 0.08	14.89
		O. Arg. S. 21772	50	31.4	32.7	34.3	35.6	38.2	. .	44.3	46.8	48.1	49.4	50.8	51 11.16	0.49	20.82	21 51 32.47	14.42
		Lacaille 8982	51	0.4	2.5	3.9	14.6	15.6	16.9	18.4	19.4	29.7	31.3	33.4	51 16.92	0.22	20.82	21 51 37.96	14.42
		Lacaille 9004	52	47.1	49.4	50.7	1.8	3.1	4.4	5.9	7.0	18.0	19.5	21.7	55 4.42	0.25	20.82	21 55 25.49	14.79
	13	Piscis Australis	53	55.2	57.6	58.9	10.3	11.4	12.8	14.1	15.2	26.4	27.8	30.1	56 12.71	0.25	20.82	21 56 33.78	14.78
		Lacaille 9027	54	21.9	24.3	25.5	36.2	37.3	38.5	40.0	41.1	51.6	52.9	55.0	59 38.57	+ 0.22	+20.82	21 59 59.61	— 14.42

1–2. Steady; mean of 15.
16–17. Through clouds.
24. Unsteady.

October 19, 1h. 45m. Image east $\overset{r.}{0.07}$. Clamp west.

October 18, . . . n. = $+\overset{s.}{0.030}$.
18–19, 13h. to 18h. — 0.020.
19, 19h. to 22h. 0.200.
22h. to 2h. — 0.280.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 18, 18.8	+ 21.21	— 0.010	+ 0.112
19, 20.3	+ 20.82	— 0.001	+ 0.112

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	CORRECTIONS. Clock.	Observed R. Ascension.	Re
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	
1863. Oct. 19	Lacaille 9038	1	. .	. .	. .	29.3	30.4	31.8	33.1	34.2	. .	. .	. .	1 31.76	+ 0.20	+20.82	22 1 52.78	— 1
	Lacaille 9058	2	40.2	42.5	43.7	54.7	55.9	57.2	58.5	59.6	10.2	11.6	13.8	4 57.08	0.27	20.82	22 5 18.17	1
	Lacaille 9097	3	0.9	3.5	4.7	15.5	16.8	18.2	19.4	20.6	31.4	32.9	35.2	11 18.08	0.28	20.82	22 11 39.18	1
Y.	Lacaille 9119	4	55.5	58.2	59.7	12.3	13.7	15.2	16.8	18.1	30.3	32.2	34.6	16 15.15	+ 0.38	20.82	22 16 36.35	1
	Lacaille 9131	5	. .	. .	. .	9.4	10.6	11.9	13.4	14.5	25.3	26.7	28.9	18 17.59	— 5.40	20.82	22 18 33.01	1
	Lacaille 9139	6	34.0	36.4	37.8	50.2	51.5	53.0	54.5	55.7	7.8	9.4	11.8	20 53.92	+ 0.36	20.82	22 21 15.10	1
	Lacaille 9163	7	16.8	19.4	20.8	32.8	34.1	35.5	36.9	38.2	50.0	51.6	53.9	23 35.45	0.34	20.82	22 23 56.61	1
	Lacaille 9167	8	50.4	52.9	54.3	6.3	7.5	9.0	10.6	11.8	23.4	24.8	27.4	25 8.95	0.34	20.82	22 25 30.11	1
	B. A. C. 7872	9	52.5	53.9	55.5	56.8	59.8	. .	10.9	13.6	15.0	16.3	18.1	28 35.24	0.61	20.82	22 28 56.67	1
	Piazzi XXII. 154	10	21.4	23.6	25.0	36.4	37.7	39.0	40.4	41.6	53.0	54.4	56.7	28 39.02	+ 0.31	20.82	22 29 0.15	1
	B. A. C. 7895	11	. .	. .	. .	23.9	25.0	26.4	27.8	29.0	40.1	41.6	44.0	32 32.22	— 5.53	20.82	22 32 47.51	1
	Lacaille 9221	12	1.8	4.2	5.4	15.8	17.0	18.2	19.5	20.5	30.8	32.2	34.3	35 18.14	+ 0.24	20.82	22 35 39.20	1
	Lacaille 9244	13	37.8	40.4	41.7	53.5	54.7	56.1	57.6	58.7	10.2	11.6	14.2	38 56.05	0.33	20.82	22 39 17.20	1
	Lacaille 9271	14	45.9	48.4	49.8	1.3	2.6	3.9	5.3	6.6	18.1	19.7	21.8	42 3.93	0.32	20.82	22 42 25.07	1
	λ Aquarii	15	56.0	58.0	59.6	8.9	10.0	11.1	12.3	13.5	23.6	24.2	26.2	45 11.09	+ 0.15	20.82	22 45 32.06	1
	Lacaille 9299	16	. .	. .	. .	11.4	12.5	13.8	15.1	16.1	26.4	27.7	29.9	47 19.11	— 5.18	20.82	22 47 34.75	1
	Flora	17	25.8	28.1	29.3	39.4	40.4	41.7	42.8	43.9	54.6	55.4	57.3	55 41.65	+ 0.21	20.82	22 56 2.68	
	B. A. C. 8061	18	. .	. .	. .	1.1	2.3	3.6	5.0	6.2	16.9	18.4	20.6	2 9.26	— 5.41	20.82	23 2 24.67	1
	O. Arg. S. 22666	19	37.0	39.1	40.2	50.6	51.6	52.7	53.9	55.0	5.1	6.3	8.4	4 52.72	+ 0.21	20.82	23 5 13.75	1
	O. Arg. S. 22670	20	. .	. .	. .	16.4	17.6	19.6	35.4	37.8	38.9	40.2	41.6	5 30.94	— 26.80	20.82	23 5 24.96	1
	O. Arg. S. 22682	21	. .	. .	. .	57.3	58.4	59.6	0.8	2.0	11.9	13.2	15.3	6 4.81	— 5.03	20.82	23 6 20.60	1
	Lacaille 9426	22	43.5	46.0	47.3	58.5	59.6	1.0	2.4	3.5	14.5	15.8	18.1	9 0.91	+ 0.29	20.82	23 9 22.02	1
	Lacaille 9440	23	. .	21.5	22.9	35.6	36.9	38.6	40.0	42.2	53.7	55.2	. .	11 38.51	+ 0.38	20.82	23 11 59.71	1
	B. A. C. 8132	24	. .	. .	. .	38.2	39.3	40.6	42.0	43.1	53.6	55.1	57.4	13 46.16	— 5.35	20.82	23 14 1.63	1
	O. Arg. S. 22817	25	40.8	42.9	44.2	54.1	55.2	56.5	57.9	59.0	8.8	10.1	12.0	16 56.50	+ 0.21	20.82	23 17 17.53	1
	Lacaille 9508	26	9.0	11.4	12.6	23.5	24.6	25.9	27.3	28.3	39.0	40.4	42.5	24 25.86	+ 0.27	20.82	23 24 46.95	1
	Lacaille 9516	27	. .	. .	. .	50.7	51.8	53.3	54.6	56.0	7.1	8.6	10.8	25 59.11	— 5.57	20.82	23 26 14.36	1
	Lacaille 9528	28	11.7	14.2	15.7	27.0	28.2	29.7	30.9	32.1	43.2	44.7	47.0	28 29.49	+ 0.30	20.82	23 28 50.61	1
	ι Piscium	29	22.5	24.0	25.8	35.4	36.4	37.6	38.7	39.7	49.4	50.6	52.8	32 37.58	0.09	20.82	23 32 58.49	1
	Lacaille 9570	30	35.7	38.3	39.7	51.4	52.6	54.0	55.5	56.7	8.1	9.8	12.0	35 53.98	0.33	20.82	23 36 15.13	1
	Lacaille 9597	31	13.4	16.1	17.6	0.0	1.3	2.9	4.4	5.7	17.9	19.5	22.0	40 2.80	0.37	20.82	23 40 23.99	1
	Lacaille 9611	32	31.[illegible]	33.9	35.2	46.6	47.8	49.2	50.6	51.7	2.6	4.1	6.3	42 49.05	0.29	20.82	23 43 10.16	1
	Lacaille 9647	33	17.8	20.2	21.5	33.0	34.2	35.6	37.0	38.0	49.1	50.6	52.8	46 35.44	0.30	20.82	23 46 56.56	1
	Lacaille 9653	34	. .	0.9	2.3	13.9	15.1	16.5	17.9	19.2	30.7	32.2	. .	50 16.52	0.32	20.82	23 50 37.66	1
	O. Arg. S. 2318[illegible]	35	26.3	28.5	29.9	40.4	41.5	42.9	44.2	45.3	55.[illegible]	56.9	59.1	53 42.77	0.24	20.82	23 54 3.83	1
	Lacaille 970[illegible]	36	36.8	39.1	40.4	51.9	53.0	54.4	55.8	57.0	8.0	9.6	11.7	56 54.33	+ 0.30	20.82	23 57 15.45	1
	Lacaille 9722	37				55.2	56.4	57.9	59.4	0.5	11.9	13.3	15.7	59 3.79	— 5.66	20.82	23 59 18.95	1
	O. Arg. S. 36	38	3.5	5.7	6.9	17.5	18.5	19.7	21.1	22.2	32.6	33.9	36.1	3 19.79	+ 0.24	20.82	0 3 40.85	1
	+ [illegible]	39	42.4	44.7	45.9	56.1	57.2	58.5	59.6	0.6	10.6	11.9	14.0	5 58.32	0.21	20.82	0 6 19.35	1
	B. A. C. [illegible]	40	38.2	40.7	41.9	53.5	54.7	55.9	57.4	58.5	9.8	11.4	13.7	8 55.97	0.31	20.82	0 9 17.10	1
	Lalande [illegible]	41	29.6	31.8	33.1	44.2	45.2	46.5	47.9	48.8	59.1	0.7	2.9	12 46.35	+ 0.26	20.82	0 13 7.43	1
	O. Arg. S. [illegible]	42				45.9	47.3	49.4	5.3	7.8	9.1	10.4	11.9	15 0.89	— 27.24	20.82	0 14 54.47	1
	Neptune	43	50.5	52.6	53.7	3.3	4.4	5.5	6.8	7.7	17.3	18.4	20.5	17 5.52	+ 0.11	20.82	0 17 26.45	
	O. Arg. S. [illegible]	44	10.3	12.5	13.7	24.3	25.3	26.5	28.1	29.1	39.3	40.4	42.6	20 26.55	0.23	20.82	0 20 47.60	1
	12 Ceti	45	31.3	33.4	34.5	44.2	45.2	46.2	47.4	48.3	57.9	59.3	1.2	22 46.26	0.14	20.82	0 23 7.22	1
	Lacaille [illegible]	46	57.3	59.6	0.8	11.3	12.6	14.0	15.3	16.5	26.8	28.1	30.4	25 13.88	0.26	20.82	0 25 13.88	1
	Lacaille [illegible]	47	44.6	46.9	48.2	58.7	59.9	1.1	2.3	3.2	13.8	15.3	17.4	29 1.04	0.25	20.82	0 29 22.11	1
	Lacaille [illegible]	48	27.3	29.4	30.7	41.5	42.7	44.1	45.3	46.4	56.9	58.3	0.5	31 43.91	0.26	20.82	0 32 4.99	1
	O. Arg. S. [illegible]	49	5.2	7.5	8.8	19.7	20.9	22.1	23.5	24.6	35.2	36.8	38.9	37 22.11	0.27	20.82	0 37 43.20	1
	Lacaille 210	50	. .	25.0	26.3	37.5	38.6	40.1	41.5	42.6	53.7	55.1	. .	39 40.04	0.29	20.82	0 40 1.15	1
	Lacaille [illegible]	51	. .	17.6	18.8	29.5	30.6	31.9	33.2	34.2	44.8	46.0	. .	42 31.84	0.24	20.82	0 42 52.90	1
	Lacaille 241	52	55.6	57.8	58.9	9.9	11.0	12.2	13.6	14.7	25.4	26.6	28.5	46 12.20	+ 0.26	20.82	0 46 33.28	1
	O. Arg. S. [illegible]	53	. .	. .	. .	. .	. .	. .	39.6	41.8	43.0	44.3	45.8	48 42.90	— 34.60	20.82	0 48 29.12	1
	O. Arg. S. [illegible]	54	4.7	7.0	8.2	19.2	20.4	21.8	23.0	24.1	34.8	36.4	38.4	51 21.61	+ 0.27	20.82	0 51 42.73	1
	Lacaille 270	55	16.5	19.0	20.5	32.3	33.5	35.0	36.5	37.6	49.2	50.8	52.9	54 34.89	+ 0.33	+20.82	0 54 56.04	+ 1

25. Faint.
47. Blurred.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.
Oct. 19, [illegible]	[illegible]	[illegible]

TE.		OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
19		Polaris	†1	0.0	21.0	6.0	40.0	23.0	9.0	1.0	41.0	2.0	55.5	15.0	10 8.50	— 6.80	+20.82	1 10 22.52	— 139.39
		Lalande 2942	2	. .	42.0	43.4	53.8	54.7	55.9	57.2	58.2	8.4	9.7	. .	28 55.92	+ 0.20	20.81	1 29 16.93	13.08
	ν	Piscium	3	47.0	49.0	50.2	59.8	0.8	2.0	3.1	4.3	13.5	15.1	16.8	34 1.96	+ 0.09	20.81	1 34 22.86	13.98
.	δ	Leonis	4	. .	. .	. .	. .	. .	. .	2.7	5.2	6.8	8.0	9.6	7 6.46	— 35.44	20.40	11 6 51.42	11.94
	β	Leonis	5	30.2	32.4	33.5	43.6	44.7	45.9	47.2	48.2	58.0	59.3	1.3	41 45.85	+ 0.13	20.37	11 42 6.35	11.34
		Venus II	6	. .	. .	. .	32.3	33.3	34.5	35.8	36.8	. .	. .	. .	42 34.54	0.06	20.37	11 42 54.97	1.72
		Mercury II	7	56.0	58.0	59.3	9.0	10.0	11.2	12.4	13.4	22.8	24.1	26.0	42 11.20	0.11	20.33	12 42 31.64	0.27
		Polaris, S. P.	8	12.0	22.0	0.0	57.0	22.0	34.0	49.0	49.0	. .	. .	. .	52 45.62	17 15.45	20.32	1 10 21.39	139.31
20		Sun I	9	49.3	51.1	52.7	2.5	3.5	4.8	5.8	6.9	16.7	18.1	20.0	38 4.67	0.11	20.22	13 38 25.00	. .
.		Sun II	10	0.4	2.6	3.8	13.7	14.8	16.0	17.1	18.2	28.0	29.3	31.1	40 15.91	0.11	20.22	13 40 36.24	. .
	α	Cor. Borealis	11	17.4	19.6	21.1	31.9	33.0	34.4	35.7	36.8	47.6	48.9	51.2	28 34.33	0.15	20.06	15 28 54.54	8.95
	α	Serpentis	†12	57.9	59.9	1.1	10.9	12.1	13.2	14.5	15.6	24.9	26.3	28.2	37 13.15	0.12	20.06	15 37 33.33	10.85
.	α	Herculis	13	50.3	52.4	53.8	3.6	4.8	5.9	7.2	8.2	18.0	19.3	21.3	8 5.89	0.13	20.13	17 8 26.15	10.25
	α	Ophiuchi	14	1.1	3.1	4.4	14.3	15.4	16.6	17.9	18.8	28.6	29.7	31.9	28 16.53	0.12	20.11	17 28 36.76	— 10.54
	δ	Ursæ Minoris	†15	22.0	45.0	7.5	28.0	8.5	. .	. .	. .	. .	. .	. .	6 10.20	+ 9 31.80	20.07	18 16 2.07	+ 87.77
	λ	Ursæ Minoris	16	. .	. .	. .	. .	. .	. .	58.0	57.0	6.0	2.0	21.0	28 52.80	— 29 2.78	20.04	20 0 10.06	+ 223.09
		B. A. C. 7205	17	36.5	38.7	40.0	51.0	51.9	53.4	54.8	55.8	6.3	7.7	9.9	40 53.27	+ 0.16	20.04	20 41 13.47	— 14.76
	μ	Aquarii	18	44.3	46.1	47.5	57.2	58.2	59.4	0.7	1.7	11.3	12.5	14.4	44 59.39	0.13	20.04	20 45 19.56	13.46
		Moon I	19	29.6	31.7	33.1	43.2	44.2	45.6	46.7	47.7	57.6	59.0	1.0	52 45.40	0.13	20.04	20 53 5.57	. .
	ν	Aquarii	20	36.1	38.1	39.5	49.2	50.3	51.5	52.6	53.8	3.5	4.7	6.7	1 51.45	0.13	20.04	21 2 11.62	13.66
	ζ	Cygni	21	32.3	34.5	35.8	47.0	48.4	49.6	50.9	52.2	3.1	4.5	6.9	6 49.56	0.08	20.04	21 7 9.68	10.97
	ι	Capricorni	22	4.9	7.1	8.4	18.4	19.6	20.7	22.0	23.0	33.0	34.3	36.3	14 20.70	0.14	20.03	21 14 40.87	14.03
	19	Aquarii	23	19.7	21.7	22.8	32.8	33.8	34.9	36.2	37.3	46.9	48.2	50.2	17 34.95	0.13	20.03	21 17 55.11	13.58
	β	Aquarii	24	49.3	51.3	52.5	2.2	3.2	4.3	5.5	6.7	16.4	17.5	19.4	24 4.39	0.12	20.03	21 24 24.54	13.37
	8	Piscis Australis	25	41.2	43.3	44.8	55.7	56.7	58.0	59.4	0.5	11.1	12.6	14.8	27 58.01	0.17	20.03	21 28 18.21	14.66
		B. A. C. 7523	26	34.3	36.4	37.8	48.5	49.5	50.8	52.1	53.4	3.7	5.2	7.3	30 50.82	0.16	20.03	21 31 11.01	14.52
		Lacaille 8892	27	38.2	40.4	41.8	52.8	53.9	55.0	56.4	57.5	8.2	9.4	11.7	33 55.03	0.16	20.03	21 34 15.22	14.61
		Lacaille 8906	28	0.6	2.8	4.3	15.3	16.4	17.9	19.3	20.5	31.4	32.7	35.0	37 17.84	0.17	20.03	21 37 38.04	14.80
		Lacaille 8929	29	5.5	8.1	9.5	22.3	23.8	25.0	26.7	28.1	40.0	41.6	44.5	41 25.01	0.21	20.03	21 41 45.25	15.59
		Lacaille 8945	30	54.5	57.0	58.6	10.8	12.0	13.4	14.9	16.2	28.1	29.8	32.1	44 13.40	0.20	20.03	21 44 33.63	15.32
		Lacaille 8952	31	31.0	33.4	35.1	47.0	48.2	49.8	51.2	52.5	4.3	5.9	8.3	45 49.70	+ 0.20	20.03	21 46 9.93	15.31
		Lacaille 8967	32	. .	. .	. .	. .	. .	. .	6.2	9.0	10.5	12.0	13.9	49 10.32	— 40.76	20.03	21 48 49.59	15.23
		Lacaille 8985	33	22.4	24.8	26.0	37.4	38.7	40.0	41.4	42.6	53.8	55.4	57.5	51 40.00	+ 0.18	20.03	21 52 0.21	14.91
		Lacaille 9004	34	48.0	50.2	51.6	2.8	4.1	5.4	6.8	8.0	18.9	20.3	22.7	55 5.34	0.18	20.03	21 55 25.55	14.78
	α	Aquarii	35	13.6	15.7	16.8	26.4	27.5	28.6	29.8	30.9	40.2	41.6	43.5	58 28.60	0.11	20.03	21 58 48.74	13.22
		Lacaille 9038	36	16.1	18.3	19.6	30.1	31.3	32.7	34.0	35.1	45.7	47.0	49.1	1 32.64	+ 0.16	20.03	22 1 52.83	14.35
		B. A. C. 7739	37	. .	. .	. .	. .	. .	. .	9.6	11.9	13.4	14.8	16.3	5 13.20	— 37.25	20.03	22 4 55.98	14.54
		Lacaille 9093	38	4.0	6.2	7.4	17.9	19.0	20.2	21.5	22.7	32.9	34.2	36.5	10 20.23	+ 0.16	20.03	22 10 40.42	14.24
	γ	Piscium	39	32.7	34.7	36.1	45.6	46.7	48.0	49.2	50.2	59.6	1.0	3.0	9 47.89	0.11	20.03	23 10 8.03	13.62
'.	δ	Leonis	40	15.6	17.7	18.9	29.4	30.4	31.7	32.9	34.1	44.1	45.6	47.7	6 31.65	0.15	19.66	11 6 51.46	11.97
	β	Leonis	41	31.0	33.1	34.3	44.3	45.4	46.6	47.9	49.0	58.7	0.0	2.0	41 46.57	0.14	19.62	11 42 6.33	11.36
		Venus II	42	51.1	53.3	54.4	4.3	5.3	6.4	7.6	8.5	18.0	19.4	21.4	43 6.34	+ 0.11	19.62	11 43 26.07	1.69
		Mercury II	†43	. .	. .	. .	. .	. .	. .	33.1	35.4	36.7	37.8	39.1	43 36.42	— 33.11	19.60	12 43 22.91	0.27
		Polaris, S. P.	†44	. .	. .	. .	. .	57.0	7.0	19.0	38.0	. .	. .	. .	9 45.25	+ 16.72	19.59	1 10 21.56	139.16
21		Sun I	45	36.7	38.8	40.0	49.6	50.8	52.0	53.3	54.3	3.6	5.0	7.0	41 51.92	0.10	19.57	13 42 11.59	. .
		Sun II	46	48.0	50.0	51.4	1.0	2.0	3.3	4.5	5.5	15.3	16.5	18.7	44 3.29	0.10	19.57	13 44 22.96	. .
	α	Cor. Borealis	47	18.0	20.3	21.6	32.5	33.6	35.0	36.4	37.5	48.2	49.6	51.8	28 34.95	0.16	19.51	15 28 54.62	8.94
	α	Herculis	48	51.0	53.1	54.4	4.4	5.4	6.6	7.8	8.8	18.6	19.9	21.9	8 6.53	0.14	19.46	17 8 26.13	— 10.24
	λ	Ursæ Minoris	†49	. .	. .	. .	47.0	41.5	. .	50.0	40.5	. .	. .	. .	59 44.75	3.44	19.36	20 0 7.55	+ 224.44
	α^2	Capricorni	50	55.7	57.8	59.0	8.9	10.0	11.3	12.5	13.5	23.2	24.4	26.5	10 11.16	0.12	19.36	20 10 30.64	— 13.63
		O. Arg. S. 20443	51	2.0	4.1	5.5	16.0	17.0	18.3	19.6	20.7	31.0	32.4	34.5	14 18.28	0.12	19.36	20 14 37.76	14.46
		B. A. C. 7040	52	4.6	6.8	8.1	18.7	19.8	21.0	22.4	23.5	34.0	35.4	37.5	20 21.00	0.12	19.35	20 20 40.47	14.60
		Lacaille 8476	53	38.8	41.2	42.6	54.0	55.2	56.5	57.8	59.0	10.4	11.7	14.0	23 56.47	0.13	19.35	20 24 15.95	15.32
		B. A. C. 7113	54	26.0	28.3	29.6	40.2	41.4	42.7	44.0	45.1	55.6	57.0	59.1	29 42.64	+ 0.12	+19.35	20 30 2.11	— 14.62

1. Unsteady.
12. Very faint.
15. Steady.
43–44. Faint.
49. Steady.

			r.	
October 20, 23h. 30m.	Image east		0.12.	Clamp west.
21, 22h. 25m.	Image east		0.20.	Clamp west.

			s.
October, 19–20,	11h. to 19h.	n. =	+ 0.040.
	20h. to 0h.		— 0.080.
20–21,	11h. to 18h.		+ 0.080.
	20h. to 23h.		— 0.000.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 20, 14.4	+ 20.25	— 0.045	+ 0,112
19.9	20.04	0.004	-
21, 18.3	+ 19.42	— 0.033	+ 0,112

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 21	B. A. C. 7147 . .	1	41.0	43.1	44.5	55.5	56.5	57.8	59.1	0.2	10.8	12.4	14.4	32 57.74	+ 0.13	+19.35	20 33 17.22	— 14.78
	O. Arg. S. 20819 .	2	41.8	44.1	45.4	55.9	57.1	58.3	59.7	0.7	11.2	12.6	14.6	37 58.31	0.12	19.34	20 38 17.77	14.42
	ω Capricorni . . .	3	5.9	8.3	9.7	20.5	21.8	23.0	24.5	25.6	36.1	37.6	39.8	43 22.98	0.13	19.34	20 43 42.45	14.77
Y.	μ Aquarii	4	44.7	46.8	48.0	57.8	59.0	0.0	1.2	2.2	. .	. .	. .	44 54.96	5.13	19.34	20 45 19.43	13.42
	32 Vulpeculæ . . .	5	10.0	12.2	13.6	24.4	25.7	26.9	28.3	29.5	40.2	41.5	43.7	48 26.91	0.13	19.34	20 48 46.38	10.83
	1 Piscis Australis .	6	19.7	22.0	23.4	34.8	36.1	37.6	38.9	40.0	51.5	53.0	55.2	52 37.47	0.13	19.34	20 52 56.94	15.31
	O. Arg. S. 21053 .	7	26.1	28.2	29.5	40.0	41.0	42.2	43.5	44.5	54.0	55.9	58.1	54 42.15	0.12	19.33	20 55 1.60	14.20
	Lacaille 8691 . .	8	42.3	44.6	46.0	57.0	58.0	59.5	0.7	1.8	12.0	14.0	16.3	58 59.35	0.13	19.33	20 59 18.81	14.83
	ν Aquarii . . .	9	36.7	38.8	40.0	49.8	50.9	52.0	53.3	54.4	4.1	5.3	7.3	1 52.05	0.11	19.33	21 2 11.49	13.64
	ζ Cygni . . .	10	32.9	35.2	36.5	47.7	48.9	50.3	51.5	52.8	3.6	5.1	7.3	6 50.16	0.13	19.33	21 7 9.62	10.95
	ι Capricorni . . .	11	5.6	7.8	9.0	19.1	20.2	21.4	22.6	23.7	33.8	35.1	37.0	14 21.39	0.12	19.32	21 14 40.83	14.02
	19 Aquarii	12	20.3	22.4	23.6	33.4	34.5	35.6	36.8	37.8	47.5	48.8	50.8	17 35.59	0.11	19.32	21 17 55.02	13.57
	B. A. C. 7467 . .	†13	58.9	1.1	2.4	13.1	14.2	15.6	16.8	18.0	28.5	29.9	32.2	22 15.52	0.12	19.32	21 22 34.96	14.59
	β Aquarii	14	50.1	52.1	53.3	3.1	4.1	5.1	6.3	7.4	16.9	18.1	20.2	24 5.15	0.11	19.32	21 24 24.58	13.35
	8 Piscis Australis .	15	41.8	44.1	45.4	56.5	57.4	58.8	0.1	1.2	11.7	13.4	15.4	27 58.69	0.13	19.32	21 28 18.14	14.64
	Lacaille 8870 . .	16	36.4	38.7	40.0	50.8	51.9	53.3	54.6	55.7	6.5	7.9	10.1	30 53.26	0.13	19.31	21 31 12.70	14.71
	Lacaille 8892 . .	17	38.9	41.3	42.4	53.4	54.5	55.7	57.0	58.1	8.8	10.2	12.4	33 55.70	0.13	19.31	21 34 15.14	14.59
	Lacaille 8907 . .	18	59.1	1.1	2.4	13.6	14.8	16.1	17.6	18.7	29.6	31.0	33.1	37 16.10	0.13	19.31	21 37 35.54	14.74
	μ Capricorni . . .	19	18.5	20.5	21.9	31.8	32.9	34.0	35.3	36.4	46.2	47.4	49.5	45 34.04	+ 0.12	19.31	21 45 53.47	13.91
	Moon	†20	20.0	21.1	. .	30.9	32.2	34.3	49.7	52.0	53.4	54.5	56.0	49 40.41	— 21.55	19.30	21 49 38.16	. .
	θ Aquarii	†21	43.9	45.3	46.6	47.8	50.3	. .	50.9	53.3	54.5	55.6	57.0	9 20.52	+ 0.36	19.29	22 9 40.17	13.58
	γ Aquarii	†22	42.9	44.3	45.6	46.7	49.2	4.4	6.4	7.5	. .	. .	. .	13 53.38	26.15	19.29	22 14 38.82	13.31
	δ Leonis	23	16.0	18.1	19.4	29.7	30.8	32.1	33.5	34.5	44.8	46.0	48.1	6 32.09	0.11	19.23	11 6 51.43	11.96
R.	Venus II . . .	24	31.2	33.4	34.7	44.2	45.2	46.4	47.7	48.7	58.0	59.5	1.5	43 46.41	+ 0.11	19.17	11 44 5.69	1.66
22	Sun I	25	. .	. .	. .	51.5	53.0	55.0	10.3	12.5	13.9	15.0	16.7	46 5.99	— 26.11	19.12	13 45 59.00	. .
	Sun II	26	36.0	37.8	39.2	49.1	50.1	51.2	52.6	53.6	3.4	4.6	6.6	47 51.29	+ 0.12	19.12	13 48 10.53	. .
	α Herculis . . .	27	51.2	53.4	54.8	4.7	5.7	7.0	8.3	9.3	19.0	20.3	22.4	8 6.92	0.11	19.05	17 8 26.08	10.23
	α Ophiuchi . . .	28	2.1	4.2	5.5	15.2	16.4	17.7	19.0	20.0	29.5	30.8	32.9	28 17.57	0.11	19.04	17 28 36.72	— 10.51
	δ Ursæ Minoris . .	†29	26.0	0.0	19.7	5.0	21.0	41.0	1.0	18.0	58.0	19.7	52.5	15 40.17	2.53	19.04	18 16 1.74	+ 88.55
Y.	β Lyræ	30	26.0	28.5	29.9	41.6	42.6	44.0	45.5	46.8	58.1	59.6	1.9	44 44.05	+ 0.11	19.09	18 45 3.25	— 8.56
R.	λ Ursæ Minoris . .	†31	. .	. .	. .	9.0	8.0	50.0	59.0	5.0	8.0	5.0	27.0	22 21.38	— 22 32.44	19.03	20 0 7.97	+ 225.72
	ρ Capricorni . . .	32	31.3	33.3	34.7	44.9	46.0	47.2	48.6	49.6	59.4	0.7	2.7	20 47.13	+ 0.17	19.03	20 21 6.33	— 14.03
	θ Aquarii	33	5.9	8.0	9.0	18.7	19.9	21.0	22.3	23.5	32.8	34.2	36.1	9 21.04	0.14	19.02	22 9 40.20	13.57
	γ Aquarii	34	4.5	6.6	7.8	17.4	18.5	19.6	20.8	21.7	31.3	32.6	34.6	14 19.58	0.12	19.02	22 14 38.72	13.30
	53 Aquarii, (1st *) .	35	14.2	15.7	16.8	18.2	20.7	. .	23.7	26.2	37.4	28.7	30.1	18 52.17	0.42	19.02	22 19 11.61	13.93
	53 Aquarii, (2d *) .	36	37.3	39.2	40.5	50.6	51.8	53.0	54.3	55.3	5.2	6.5	8.4	18 52.92	0.16	19.02	22 19 12.10	13.93
	σ Aquarii	37	53.3	55.3	56.5	6.2	7.4	8.6	9.9	10.8	20.5	21.9	23.8	23 8.56	0.14	19.02	22 23 27.72	13.68
	η Aquarii	38	49.0	50.6	52.2	1.7	2.7	3.8	5.0	6.0	15.6	16.8	18.7	28 3.83	0.11	19.02	22 28 22.96	13.33
	κ Aquarii	39	9.6	11.6	12.8	22.3	23.3	24.6	25.9	26.8	36.3	37.5	39.5	30 24.56	0.13	19.02	22 30 43.71	13.46
	20 Piscis Australis .	40	29.6	30.9	33.1	43.7	44.9	46.2	47.7	48.8	59.4	0.6	2.7	37 46.15	0.20	19.02	22 38 5.37	14.22
	τ² Aquarii	41	49.8	51.7	52.9	2.9	4.0	5.3	6.4	7.6	17.2	18.4	20.4	42 5.14	0.15	19.02	22 42 24.31	13.77
	Moon I	42	10.1	12.0	13.3	23.8	24.3	25.5	26.7	27.8	37.2	38.4	40.5	44 25.42	0.12	19.02	22 44 44.56	. .
	φ Aquarii	43	43.4	45.6	46.7	56.2	57.4	58.7	0.0	1.0	10.4	11.8	13.4	6 58.60	0.13	19.02	23 7 17.75	13.57
	γ Piscium	44	34.0	35.9	37.0	46.7	47.9	49.1	50.3	51.3	0.7	1.8	4.0	9 48.47	0.11	19.02	23 18 8.10	13.60
	Ψ² Aquarii . . .	45	19.8	21.8	23.2	32.9	33.9	35.0	36.1	37.2	47.0	48.3	50.3	11 35.05	0.14	19.02	23 11 54.21	13.64
23	Sun I	†46	15.3	14.5	15.6	25.5	26.6	27.8	29.0	30.0	39.7	41.0	43.0	48 27.73	. .	. .	. . . . .	. .
Y.	Sun II	†47	24.1	26.2	27.5	37.3	38.3	39.5	40.6	41.7	51.5	52.8	54.8	50 39.48	. .	. .	. . . . .	. .
25	η Piscium	†48	40.8	42.8	44.2	54.2	55.2	56.4	57.7	58.6	8.5	9.9	11.9	24 56.38	0.09	17.74	1 25 14.21	14.44
R.	Moon I	†49	31.3	33.3	34.5	44.7	45.8	47.0	48.3	49.3	59.1	0.3	2.4	27 46.91	0.09	17.74	1 28 4.74	. .
	ν Piscium	†50	49.9	51.7	53.1	2.9	4.1	5.2	6.3	7.3	16.7	18.0	20.1	34 5.03	0.10	17.74	1 34 22.87	14.02
Y.	Venus II . . .	51	30.5	32.6	33.7	43.4	44.5	45.5	46.6	47.7	57.3	58.5	0.6	47 45.54	0.11	17.87	11 48 3.52	1.58
	Mercury II . . .	52	23.6	25.0	26.8	36.5	37.6	38.7	40.0	41.0	50.5	51.7	53.7	55 38.70	0.11	17.84	12 55 56.65	0.21
	Polaris, S. P. . .	53	. .	. .	. .	. .	56.0	7.0	17.0	36.0	10.0	20.0	59.0	6 3.57	+ 3 59.83	+17.84	1 10 21.24	— 138.63

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 22, 15.0	+ 19.15	— 0.020	+ 0.112
20.5	+ 19.03	— 0.005	. .

13. Faint.
20. Under clouds.
21–22. Through clouds.
29. Faint.
31. Very unsteady on set E.
46–47. Steady.
48–49–50. Through dense clouds.

October 22. Night unfavorable. Stars blurred and unsteady.

October 21–22, 11h. to 19h. n. = + 0.040 s.
20h. to 0h. — 0.150.

E.		OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
26		Sun I	†1	41.3	43.3	44.6	54.4	55.7	56.9	58.0	59.2	8.7	10.3	12.2	0 56.78	+ 0.12	+17.82	14 1 14.72	. .
		Sun II	†2	53.7	55.9	57.1	7.0	8.1	9.3	10.5	11.5	21.3	22.5	24.6	3 9.23	0.12	17.82	14 3 27.17	. .
	α	Cor. Borealis	3	19.8	22.1	23.3	34.3	35.5	36.7	38.1	39.3	49.9	51.3	53.4	28 36.70	+ 0.12	17.78	15 28 54.60	− 8.91
	α	Lyræ	†4	42.4	45.1	46.7	. .	. .	1.9	3.5	4.8	16.8	18.5	21.1	32 2.31	− 0.45	17.70	18 32 19.56	7.58
	β	Lyræ	5	1.9	3.5	5.1	6.5	9.3	. .	21.2	23.9	25.4	26.9	28.4	44 45.21	+ 0.32	17.70	18 45 3.23	8.48
	η	Aquarii	6	50.2	52.2	53.5	3.0	4.0	5.2	6.4	7.4	16.9	18.2	20.0	28 5.18	+ 0.11	17.61	22 28 22.90	13.28
		Lacaille 9197	7	. .	. .	. .	50.3	51.4	53.0	54.3	55.6	7.1	8.6	11.0	30 58.91	− 5.67	17.61	22 31 10.85	14.58
	ρ	Gruis	8	58.7	1.4	3.2	16.2	17.7	19.0	20.7	22.0	35.0	36.5	39.2	35 19.05	+ 0.40	17.60	22 35 37.05	15.05
		Lacaille 9242	9	39.6	42.3	43.8	57.0	58.4	59.9	1.7	3.0	15.8	17.6	20.2	38 59.94	0.41	17.60	22 39 17.95	15.01
		Lacaille 9270	10	48.3	51.0	52.5	5.8	7.3	8.7	10.3	11.5	24.5	25.9	28.7	42 8.59	0.41	17.60	22 42 26.60	14.96
	λ	Aquarii	11	59.1	1.1	2.2	12.0	13.1	14.3	15.5	16.6	26.1	27.4	29.4	45 14.25	0.15	17.60	22 45 32.00	13.53
	α	Piscis Australis	12	33.4	35.7	37.0	48.3	49.5	51.0	52.3	53.5	4.6	6.0	8.2	49 50.86	0.29	17.60	22 50 8.75	14.36
		B. A. C. 8007	13	10.1	12.4	13.6	24.5	25.6	27.0	28.1	29.4	39.9	41.3	43.5	52 26.85	0.26	17.60	22 52 44.71	14.07
		Lacaille 9356	14	43.2	45.7	47.0	58.6	59.8	1.0	2.4	3.5	14.8	16.2	18.4	56 0.96	0.30	17.59	22 56 18.85	14.24
		Lacaille 9373	15	59.0	1.3	2.8	14.0	15.2	16.5	17.9	19.1	30.2	31.6	34.0	59 16.51	0.30	17.59	22 59 34.40	14.19
		B. A. C. 8064	16	49.4	51.9	53.0	4.1	5.4	6.7	8.0	9.1	20.0	21.4	23.6	2 6.60	0.28	17.59	23 2 24.47	14.10
		O. Arg. S. 22666	17	17.5	18.8	20.4	21.7	24.1	. .	27.2	29.7	30.8	32.4	33.8	4 55.64	0.47	17.59	23 5 13.70	13.78
		O. Arg. S. 22670	18	. .	. .	. .	4.9	6.0	7.1	8.4	9.5	. .	. .	. .	5 7.18	0.16	17.59	23 5 24.93	13.78
		Lacaille 9426	19	46.8	49.2	50.4	1.5	2.8	4.2	5.5	6.7	17.5	18.9	21.3	9 4.07	0.29	17.59	23 9 21.95	14.06
		Lacaille 9440	20	21.8	24.7	26.2	38.9	40.1	41.6	43.0	44.5	56.9	58.5	1.1	11 41.57	0.38	17.59	23 11 59.54	14.41
		O. Arg. S. 22817	21	43.9	45.9	47.3	57.4	58.4	59.7	0.9	2.0	12.1	13.2	15.4	16 59.65	0.21	17.59	23 17 17.45	13.74
		B. A. C. 8172	22	6.7	9.1	10.7	23.0	24.3	25.6	26.9	28.1	40.0	41.4	43.9	20 25.43	0.35	17.59	23 20 43.37	14.16
		Lacaille 9496	23	40.2	42.6	44.1	56.4	57.7	52.2	0.6	2.2	14.0	15.6	18.0	22 59.15	0.36	17.58	23 23 17.09	14.17
	β	Sculptoris	24	4.2	6.7	8.0	20.7	21.9	23.5	24.9	26.2	38.3	40.0	42.6	25 23.36	0.37	17.58	23 25 41.31	14.16
		Lacaille 9528	25	15.0	17.3	18.6	20.2	31.3	32.8	34.1	35.3	46.3	47.8	50.0	28 32.61	0.30	17.58	23 28 50.49	13.94
		Lacaille 9547	26	4.8	7.5	8.7	20.4	21.6	23.0	24.5	25.6	37.1	38.6	40.8	32 22.96	0.32	17.58	23 32 40.86	13.94
		O. Arg. S. 23035	27	30.1	32.2	33.4	43.5	44.6	46.0	47.1	48.2	58.2	59.6	1.6	38 45.86	0.21	17.58	23 39 3.65	13.66
	δ	Sculptoris	28	16.4	18.8	20.1	31.0	32.3	33.6	34.9	36.0	47.1	48.5	50.7	41 33.58	0.28	17.58	23 41 51.44	13.80
		Lacaille 9625	29	15.5	18.1	19.5	31.0	32.4	33.7	35.2	36.5	47.7	49.3	51.8	44 33.70	0.33	17.57	23 44 51.60	13.81
		B. A. C. 8313	30	40.0	42.3	43.6	55.1	56.4	57.7	59.3	0.3	11.6	13.1	15.4	47 57.71	0.32	17.57	23 48 15.60	13.75
		Lacaille 9544	31	14.4	15.9	17.6	19.0	21.9	. .	33.3	36.2	37.5	39.0	40.4	47 57.52	0.62	17.57	23 48 15.71	13.75
		Lacaille 9699	32	24.1	26.5	28.2	40.6	41.9	43.4	44.9	46.2	58.3	0.0	2.5	54 43.33	0.37	17.54	23 55 1.24	13.74
		Lacaille 9706	33	48.4	50.8	52.2	. .	. .	. .	. .	. .	19.4	20.9	23.2	57 5.82	+ 0.34	17.53	23 57 23.69	13.63
		Lacaille 9707	34	6.0	7.3	8.8	10.2	11.2	. .	43.1	45.9	47.2	48.8	50.2	57 27.87	− 18.91	17.53	23 57 26.49	13.63
		Lacaille 9722	35	. .	. .	. .	. .	. .	. .	36.8	39.7	41.1	42.6	44.3	59 40.90	− 39.47	17.53	23 59 18.96	13.63
		Weisse 51	36	35.8	37.8	38.9	48.8	49.8	51.0	52.3	53.2	2.7	3.9	5.9	3 50.92	+ 0.10	17.52	0 4 8.54	13.65
		Weisse 90	37	. .	. .	. .	48.4	49.5	50.8	51.9	52.9	2.4	3.6	5.5	5 55.62	− 4.89	17.52	0 6 8.25	13.65
		B. A. C. 42	38	27.2	29.2	30.4	40.2	41.2	42.3	43.5	44.5	54.0	55.2	57.1	8 42.25	+ 0.10	17.52	0 8 59.87	13.66
		Neptune	39	. .	. .	. .	. .	. .	. .	.0	.4	.5	.6	.0	.30	− 33.04	17.52	0 16 .78	. .
	β	Ceti	40	13.5	15.7	16.9	27.1	28.3	29.5	30.7	31.8	41.7	43.1	45.3	36 29.42	+ 0.21	17.48	0 36 47.11	13.45
		Weisse 733	41	29.8	31.9	33.0	42.8	43.9	45.1	46.2	47.2	56.8	58.0	0.0	42 44.97	0.08	17.48	0 43 2.53	13.90
		Weisse 788	42	9.1	11.2	12.3	22.0	23.1	24.2	25.5	26.5	36.1	37.3	39.3	45 24.24	0.08	17.48	0 45 41.80	13.92
		O. Arg. S. 542	43	7.9	10.3	11.7	22.7	23.8	25.1	26.3	27.4	38.4	39.7	42.1	51 25.04	0.28	17.48	0 51 42.80	13.11
		Weisse 946	44	11.1	13.1	14.3	24.2	25.2	26.3	27.4	28.6	38.1	39.4	41.4	54 26.28	0.07	17.47	0 54 43.82	14.02
		O. Arg. S. 621	45	18.5	20.0	21.7	22.8	. .	. .	.	36.1	37.3	58.6	40.2	58 59.40	0.57	17.47	0 59 17.44	13.04
		O. Arg. S. 623	46	50.1	52.4	53.6	4.5	5.7	7.1	8.6	9.6	20.2	21.7	23.9	59 7.04	0.27	17.47	0 59 24.78	13.04
		Weisse 20	47	. .	. .	. .	55.1	56.1	57.3	58.5	59.5	. .	. .	. .	2 57.30	+ 0.05	17.47	1 3 14.82	13.85
		Polaris	†48	. .	. .	. .	42.5	23.0	12.0	2.0	40.0	. .	. .	. .	10 11.90	− 8.74	17.47	1 10 20.63	138.62
	θ	Ceti	49	42.3	44.3	45.6	55.4	56.4	57.5	58.8	59.7	9.5	10.6	12.6	16 57.52	+ 0.16	17.46	1 16 15.14	13.48
		O. Arg. S. 850 (1st *)	50	33.0	34.5	35.7	37.2	39.6	. .	42.8	45.3	46.5	47.8	49.4	21 11.18	0.47	17.46	1 21 29.11	13.16
		O. Arg. S. 850 (2d *)	51	56.5	58.6	59.8	10.0	11.0	12.1	13.5	14.6	24.7	25.9	28.0	21 12.24	0.21	17.46	1 21 29.91	13.16
	η	Piscium	52	41.2	43.3	44.4	54.5	55.5	56.8	57.9	58.8	8.9	10.1	12.2	23 56.69	0.04	17.46	1 24 14.19	14.43
	π	Piscium	53	22.3	24.4	25.5	35.4	36.4	37.7	38.9	39.9	49.6	50.9	52.8	29 37.62	0.06	17.46	1 29 55.14	14.32
	67	Ceti	54	40.8	43.0	44.2	53.9	54.9	56.1	57.3	58.4	7.9	9.1	11.2	9 56.07	0.14	17.44	2 10 13.65	13.49
		Lalande 4410	55	8.6	10.8	12.0	22.3	23.4	24.7	25.9	27.0	37.2	38.3	40.3	15 24.59	+ 0.18	17.44	2 15 42.21	− 12.83

1. Unsteady.
2. More steady.
4. Steady.
48. Steady.

October 26. 16h. Took out, cleaned and replaced the object glass.
26. First part stars steady, latter part less so.

October 26, 2h. Image west $\overset{r.}{0.04}$. Clamp west.

October 25—26, 11h. to 19h. n. = $-\overset{s.}{0}.020$.
26, 18h. to 22h. 0.150.
22h. to 2h. 0.280.
2h. to 4h. —0.200.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 25, 51.5	+ 17.74	− 0.009	+ 0.112
26, 20.7	+ 17.65	− 0.025	. .
2.6	+ 17.43	− 0.025	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 26	Lacaille 727	1	37.2	39.4	40.7	51.1	52.3	53.5	54.9	56.0	6.2	7.4	9.6	18 53.48	+ 0.20	+17.44	2 19 11.12	− 12.57
	Lacaille 750	2	19.2	21.3	22.6	33.2	34.3	35.5	36.7	37.7	48.4	49.6	51.9	22 35.49	0.21	17.44	2 22 53.14	12.46
	Moon II	3	11.6	13.6	14.9	25.3	26.4	27.6	28.9	30.0	40.0	41.3	43.4	25 27.55	0.06	17.44	2 25 45.05	. .
Y.	O. Arg. S. 1664	4	. .	. .	. .	24.8	26.0	27.5	28.7	29.8	. .	. .	. .	29 27.36	0.18	17.43	2 29 44.97	12.18
	Lacaille 803	5	3.0	5.1	6.4	17.1	18.1	19.3	20.7	21.9	32.2	33.5	35.7	31 19.36	0.21	17.43	2 31 37.00	12.40
	O. Arg. S. 1744	6	19.9	22.0	23.3	33.4	34.5	35.8	37.0	38.1	48.1	49.4	51.6	34 35.74	+ 0.19	17.43	2 34 53.36	12.70
	Lacaille 838	7	. .	. .	. .	37.3	38.5	39.8	41.3	42.5	53.2	54.7	57.0	36 45.54	− 5.44	17.43	2 36 57.53	12.01
	π Arietis	8	10.9	13.1	14.4	24.4	25.6	26.8	28.0	28.9	38.9	40.1	42.2	41 26.66	+ 0.06	17.43	2 41 44.15	15.05
	* — 23° 39′	9	11.5	13.9	15.1	25.7	26.9	28.2	29.5	30.5	40.8	42.1	44.3	44 28.06	0.21	17.43	2 44 45.70	12.27
	ρ^3 Arietis	10	14.1	16.4	17.4	27.7	28.8	30.1	31.4	32.3	42.3	43.6	45.6	48 29.97	0.05	17.42	2 48 47.44	15.13
	ε Arietis	11	54.4	56.5	57.9	8.1	9.3	10.6	11.7	12.9	23.0	24.3	26.7	51 10.49	0.04	17.42	2 51 27.95	15.43
	Lacaille 959	12	20.3	22.5	23.9	34.7	36.1	37.5	38.9	40.0	50.8	52.0	54.3	54 37.36	0.20	17.42	2 54 54.98	11.87
	* — 23° 40′	†13	38.9	41.1	. .	52.9	53.9	55.0	56.3	57.5	. .	9.5	11.4	57 55.17	0.21	17.42	2 58 12.80	12.18
	δ Arietis	†14	19.6	21.8	23.1	33.3	34.4	35.5	36.8	37.9	48.0	49.1	51.5	3 35.55	0.05	17.42	3 3 53.02	15.39
R.	β Leonis	15	33.7	35.9	37.0	47.0	48.0	49.3	50.5	51.7	1.4	2.7	4.8	41 49.27	0.08	17.11	11 42 6.46	11.48
	Venus II	16	49.4	51.3	52.7	2.4	3.5	4.7	5.9	6.9	16.3	17.5	19.5	49 4.56	+ 0.11	17.11	11 49 21.78	1.53
	Polaris, S. P.	17	. .	. .	. .	. .	. .	. .	. .	. .	44.0	52.0	55.0	33 50.33	− 23 46.67	17.06	1 10 20.72	138.62
27	Sun I	18	33.0	35.2	36.3	46.4	47.4	48.6	49.7	50.8	0.3	1.8	3.8	4 48.48	+ 0.14	17.05	14 5 5.67	. .
	Sun II	19	45.6	47.7	48.8	58.9	59.9	1.1	2.4	3.4	13.0	14.3	16.4	7 1.05	+ 0.14	17.05	14 7 18.24	. .
	ε Arietis	20	. .	. .	. .	8.8	10.0	11.2	12.3	13.5	. .	. .	. .	51 11.16	− 0.01	16.76	2 51 27.91	15.44
	δ Arietis	21	20.3	22.5	23.7	33.9	35.1	36.2	37.5	38.7	48.6	50.2	52.2	3 36.26	+ 0.05	16.76	3 3 53.07	15.40
	ζ Arietis	22	33.7	36.2	37.4	47.7	49.0	50.2	51.5	52.5	2.6	4.1	6.1	6 50.09	0.04	16.76	3 7 6.89	15.50
	τ^1 Arietis	23	51.6	53.6	55.0	5.3	6.4	7.8	9.2	10.1	20.2	21.5	23.6	13 7.66	0.04	16.76	3 13 24.46	15.54
	Moon II	24	12.6	14.6	16.0	26.4	27.6	28.9	30.2	31.3	41.7	43.0	45.0	21 28.85	0.05	16.75	3 21 45.65	. .
	ε Eridani	25	0.9	3.0	4.3	14.1	15.0	16.2	17.5	18.4	28.0	29.4	31.4	26 16.20	0.15	16.75	3 26 33.10	13.00
	9 Tauri	26	27.0	29.1	30.4	41.1	42.2	43.3	44.7	45.8	56.0	57.5	59.5	28 43.33	0.03	16.75	3 29 0.11	15.81
	η Tauri	27	52.8	54.9	56.2	6.8	8.0	9.3	40.7	11.8	22.0	23.6	25.6	39 9.25	0.03	16.75	3 39 26.03	− 15.97
	ζ Ursæ Minoris, S. P.	28	. .	38.5	32.5	45.6	40.3	34.4	28.7	24.0	37.0	30.7	. .	48 34.63	0.40	16.74	3 48 51.77	+ 16.10
	A^1 Tauri	29	8.1	10.3	11.6	22.0	23.1	24.5	25.7	26.8	36.9	38.5	40.4	56 24.36	0.04	16.74	3 56 41.14	− 15.79
	o^1 Eridani	30	43.2	45.3	46.4	56.1	57.3	58.4	59.7	0.7	10.4	11.6	13.4	4 58.41	0.14	16.73	4 4 15.28	13.13
Y.	β Leonis	31	34.2	36.3	37.5	47.5	48.6	49.7	51.0	52.1	2.0	3.2	5.4	41 49.77	0.12	16.62	11 42 6.51	11.50
	Mercury II	32	27.2	29.2	30.4	40.1	41.1	42.3	43.6	44.6	54.1	55.4	57.3	3 42.30	+ 0.11	16.58	13 3 58.99	0.22
	Polaris, S. P.	33	. .	. .	.	35.5	55.0	6.5	18.0	38.5	. .	. .	. .	10 6.70	− 2.62	16.58	1 10 20.66	138.62
	α Virginis	34	28.9	31.2	32.4	42.0	43.2	44.5	45.7	46.6	56.0	57.5	59.6	17 44.33	+ 0.11	16.58	13 18 1.02	11.72
28	Sun I	†35	24.9	26.9	28.0	38.1	39.0	40.3	41.5	42.6	52.4	53.4	55.5	8 40.24	0.12	16.56	14 9 56.92	. .
	Sun II	†36	37.6	39.7	41.0	50.9	51.9	53.1	54.4	55.5	5.2	6.5	8.6	10 53.13	0.12	16.56	14 11 9.81	. .
	α Cor. Borealis	37	20.9	23.1	24.6	35.3	36.5	38.0	39.3	40.4	51.0	52.5	54.8	28 37.86	0.13	16.52	15 28 54.51	8.90
	α Herculis	38	53.9	56.1	57.2	7.3	8.4	9.6	10.8	11.8	21.6	22.8	24.8	8 9.48	0.12	16.48	17 8 26.08	− 10.16
	δ Ursæ Minoris	39	27.0	0.5	22.0	4.5	22.0	42.0	1.5	18.5	59.0	20.7	52.5	15 40.93	1.89	16.45	18 15 59.27	+ 90.80
	α Lyræ	40	43.6	46.2	47.6	0.2	1.4	2.9	4.5	5.8	17.8	19.5	22.0	32 2.86	0.14	16.45	18 32 19.45	− 7.54
	ε Eridani	41	1.2	3.4	4.6	14.2	15.3	16.5	17.8	18.7	28.4	29.6	31.6	26 16.48	+ 0.15	16.49	3 26 33.12	13.01
	17 Tauri	42	. .	. .	.	31.1	32.4	33.6	35.0	36.1	46.2	47.7	49.6	36 38.96	− 5.41	16.49	3 36 50.04	15.96
	η Tauri	43	53.1	55.3	56.6	7.2	8.3	9.6	10.7	11.8	22.3	23.5	25.7	39 9.46	+ 0.03	16.49	3 39 25.98	15.99
	γ Eridani	44	10.5	12.7	13.9	23.9	24.9	26.0	27.3	28.2	38.1	39.3	41.3	51 26.01	0.17	16.48	3 51 42.66	12.67
	A^1 Tauri	45	8.4	10.6	11.7	22.3	23.5	24.8	26.2	27.2	37.5	38.8	40.7	56 24.70	0.04	16.48	3 56 41.22	15.81
	ω^2 Tauri	46	46.8	48.9	50.2	0.5	1.7	2.9	4.3	5.1	15.4	16.6	18.7	9 2.83	0.04	16.48	4 9 19.35	15.67
	δ^1 Tauri	47	34.9	37.0	38.3	48.5	49.5	50.9	52.1	53.1	13.0	14.4	16.4	14 50.74	0.05	16.48	4 15 7.27	15.36
	Moon II	48	19.1	21.2	22.5	33.2	34.4	35.7	36.9	38.1	48.5	49.8	51.9	17 35.57	0.04	16.48	4 17 52.09	. .
	ε Tauri	49	9.9	12.0	13.3	23.5	24.5	25.9	27.2	28.3	38.2	39.4	41.4	20 25.78	0.05	16.48	4 20 42.31	15.60
	α Tauri	50	36.6	38.8	39.7	49.9	51.0	52.3	53.5	54.6	4.5	5.6	8.0	27 52.23	0.06	16.48	4 28 8.77	15.27
	μ Eridani	51	12.0	14.1	15.2	24.9	25.9	27.2	28.2	29.2	38.9	40.1	42.1	38 27.07	0.12	16.48	4 38 43.67	13.40
	ν Orionis	52	17.7	19.8	20.9	31.0	31.9	32.9	34.2	35.2	45.0	46.5	48.5	59 33.05	0.06	16.46	5 59 49.57	14.85
	δ Ursæ Minoris, S. P.	53	55.5	. .	. .	17.0	. .	40.5	19.0	1.7	22.7	2.0	29.7	14 46.01	+ 53.26	. .	. . .	. .
	β Leonis	54	34.7	36.7	38.0	48.1	49.1	50.3	51.5	52.6	2.6	4.0	5.8	41 50.31	− 0.12	+16.32	11 42 6.51	− 11.52

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 27, 0.4	+ 16.82	− 0.023	+ 0.112
28, 15.2	16.53	0.025	. .
4.4	+ 16.48	− 0.010	.

13. Faint.
14. Unsteady.
35. Unsteady.
36. Steady.

October 27, 2h. 40m. Image west 0.16 r. Clamp west.
Stars very unsteady.

October 26–27, 11h. to 15h. n. = − 0.120 s.
27, 3h. to 5h. − 0.210.
27–28, 11h. to 19h. 0.000.
3h. to 7h. − 0.210.
28–29. 11h. to 19h. + 0.280.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 28	Venus II	1	48.2	50.0	51.2	1.0	2.2	3.3	4.5	5.4	14.8	16.2	18.0	52 3.16	— 0.15	+16.32	11 52 19.33	— 1.48
	Polaris, S. P.	2	52.0	59.0	6.0	13.0	37.0	..	..	..	16.0	25.0	6.0	21 4.25	10 58.91	16.27	1 10 21.61	137.58
R.	α Virginis	3	29.7	31.7	32.9	42.6	43.8	45.0	46.2	47.3	56.8	58.0	0.2	17 44.93	0.19	16.26	13 18 1.00	11.73
29	Sun I	4	17.8	19.8	21.2	30.9	32.1	33.3	34.5	35.6	44.9	46.4	48.5	12 33.18	0.21	16.23	14 12 49.20	..
	Sun II	5	30.9	32.8	34.4	44.0	45.2	46.5	47.7	48.8	58.3	59.7	1.5	14 46.35	0.21	16.23	14 15 2.37	..
	α Cor. Borealis	6	21.6	23.8	25.2	36.0	37.2	38.5	39.8	40.8	51.6	53.0	55.2	28 38.43	0.01	16.18	15 28 54.60	8.90
	α Herculis	7	54.6	56.6	57.7	7.7	8.8	10.0	11.2	12.4	22.1	23.3	25.5	8 9.99	0.07	16.12	17 8 26.04	10.15
	α Ophiuchi	8	5.1	7.2	8.5	18.4	19.4	20.7	21.8	22.9	32.7	33.8	35.9	28 20.58	— 0.08	16.11	17 28 36.61	— 10.43
	δ Ursæ Minoris	9	26.0	0.5	20.0	4.0	21.8	41.0	2.0	17.5	59.0	20.0	53.0	15 40.44	+ 2.36	16.17	18 15 58.97	+ 91.20
	α Lyræ	10	43.8	46.5	48.0	0.4	1.7	3.3	4.8	6.0	18.2	19.9	22.4	32 3.18	0.05	16.16	18 32 19.39	— 7.51
	β Lyræ	11	29.0	31.3	32.8	44.4	45.6	46.9	48.4	49.6	0.9	2.5	4.8	44 46.93	+ 0.02	16.15	18 45 3.10	8.41
	11 Orionis	12	17.8	19.9	21.2	31.2	32.2	33.4	34.7	35.9	45.6	46.8	48.8	56 33.41	— 0.13	16.24	4 56 49.52	15.16
	Lacaille 1738	13	41.5	43.7	45.0	56.2	57.2	58.5	59.9	1.0	11.5	12.9	15.2	4 58.42	0.18	16.24	5 5 14.48	11.09
	Lacaille 1753	14	53.5	56.1	57.3	..	..	..	..	..	23.8	25.1	27.5	7 10.55	0.14	16.24	5 7 26.65	10.94
	* — 27° 20′	†15	..	..	..	12.2	13.3	14.7	16.1	17.2	..	..	..	7 14.70	0.23	16.24	5 7 30.71	10.94
	Moon II	16	50.0	52.1	53.5	4.1	5.3	6.5	7.7	8.9	19.3	20.6	22.8	13 6.44	0.13	16.24	5 13 22.55	..
	β Tauri	17	10.2	12.2	13.6	24.8	25.9	27.1	28.6	29.8	40.3	41.8	44.2	17 27.14	0.14	16.24	5 17 43.24	16.69
	* — 26° 41′	18	..	..	..	56.1	57.1	58.5	59.8	0.8	..	..	..	21 58.46	0.23	16.24	5 22 14.47	10.93
	δ Orionis	19	33.6	35.5	36.8	46.6	47.8	49.0	50.2	51.1	0.5	1.7	3.8	24 48.78	0.14	16.24	5 25 4.88	13.52
	ζ Tauri	20	0.1	2.4	3.8	14.0	15.2	16.5	17.7	18.8	29.0	30.4	32.5	29 16.40	0.14	16.24	5 29 32.50	15.70
	Uranus	†21	24.7	26.7	28.0	..	..	..	13.4	15.0	17.3	18.7	19.9	36 57.96	17.30	16.24	5 36 56.90	..
	χ^1 Orionis	22	..	..	..	2.6	3.7	4.8	6.1	7.2	..	..	..	46 4.88	0.18	16.24	5 46 20.94	15.54
	α Orionis	23	18.7	20.6	21.7	31.5	32.7	33.9	35.0	36.0	45.4	46.6	48.8	47 33.72	— 0.14	16.24	5 47 49.82	— 14.19
	δ Ursæ Minoris, S. P.	†24	17.0	36.0	18.0	56.0	34.0	..	..	..	..	..	..	6 20.20	+ 9 22.44	16.23	6 15 58.87	+ 91.40
31	δ Ursæ Minoris	25	25.5	..	21.0	3.7	21.5	41.5	1.3	19.0	59.0	..	53.0	15 40.61	+ 1.03	15.70	18 15 57.34	+ 92.02
Y.	α Lyræ	26	..	46.9	48.5	0.9	2.2	3.7	5.3	6.5	18.7	20.3	..	32 3.67	— 0.03	15.70	18 32 19.34	— 7.47
	β Lyræ	27	29.4	31.8	33.3	44.8	46.0	47.5	49.0	50.1	1.4	3.0	5.2	44 47.41	0.04	15.70	18 44 3.07	8.38
R.	α Andromedæ	28	50.3	53.0	54.3	5.1	6.4	7.6	9.1	10.2	20.9	22.3	24.6	1 7.62	0.19	15.88	0 1 23.31	13.95
	* — 18° 57′	29	..	..	..	1.6	2.5	3.8	5.1	6.2	.	..	..	6 3.84	0.18	15.87	0 6 19.53	13.51
	Lalande 344	30	35.0	37.1	38.6	49.3	50.4	51.8	53.2	54.4	4.7	6.1	8.2	12 51.71	0.13	15.87	0 13 7.45	13.44
	Lacaille 66	31	1.2	3.5	4.8	15.9	17.4	18.6	19.9	21.3	32.3	33.6	35.9	16 18.58	0.13	15.86	0 16 34.31	13.40
	O. Arg. S. 202	32	..	..	..	29.5	30.5	31.9	33.2	34.2	..	..	..	20 31.86	0.18	15.86	0 20 47.54	13.42
	12 Ceti	33	36.5	38.5	39.9	49.4	50.4	51.7	52.8	53.9	3.3	4.6	6.5	22 51.59	0.14	15.85	0 23 7.30	13.58
	B. A. C. 136	34	30.6	33.2	34.6	46.7	47.8	49.2	50.8	52.1	3.6	5.2	7.6	26 49.22	0.13	15.85	0 27 4.94	13.24
	Lacaille 142	35	..	..	..	19.2	20.6	22.6	38.9	41.3	42.8	44.3	45.6	29 34.41	28.15	15.85	0 29 22.11	13.34
	Lacaille 181	36	29.4	31.7	33.2	45.3	46.6	48.0	49.7	50.9	2.8	4.4	6.7	35 48.06	0.13	15.84	0 36 3.77	13.11
	Lacaille 218	37	46.5	48.7	50.1	0.4	1.6	2.8	4.3	5.2	15.6	16.9	19.0	41 2.83	0.13	15.83	0 41 18.53	13.28
	Lacaille 234	38	20.9	23.4	25.0	37.6	38.9	40.4	42.0	43.3	55.5	57.3	59.8	44 40.37	0.13	15.83	0 44 56.07	12.94
	Lacaille 256	39	48.4	50.7	52.0	..	..	..	..	..	18.7	20.2	22.5	49 5.42	0.09	15.83	0 49 21.16	13.10
	O. Arg. S. 542	40	..	12.4	13.7	24.6	25.7	27.0	28.5	29.6	40.3	41.7	..	51 27.06	0.14	15.82	0 51 42.74	13.09
	70 Piscium	41	33.3	35.4	36.5	46.5	47.5	48.6	50.0	51.0	0.5	1.6	3.7	54 48.60	0.15	15.82	0 55 4.27	13.97
	ε Piscium	42	23.9	25.9	27.2	36.8	38.0	39.2	40.3	41.4	51.0	52.3	54.2	55 39.11	0.15	15.82	0 55 54.78	13.96
	O. Arg. S. 636	43	5.9	8.1	9.4	..	..	..	..	..	35.4	37.0	39.2	0 22.50	0.09	15.81	1 0 38.22	13.07
	Polaris	44	..	..	..	42.5	26.0	16.0	4.0	46.0	..	..	..	10 14.90	10.02	15.80	1 10 20.68	138.27
	* — 28° 55′	45	54.2	56.4	57.8	8.8	9.7	11.0	12.2	13.2	23.7	25.2	27.1	28 10.85	0.13	15.78	1 28 26.50	12.71
	ν Piscium	46	52.3	54.5	55.6	5.2	6.2	7.5	8.6	9.6	19.2	20.4	22.3	34 7.40	— 0.15	15.77	1 34 23.08	14.04
	O. Arg. S. 1052	†47	43.6	45.8	47.2	58.1	59.3	0.7	2.0	3.0	..	..	..	38 54.96	+ 5.43	15.77	1 39 16.16	12.68
	O. Arg. S. 1056	†48	..	..	..	9.2	10.6	12.0	13.3	14.3	..	..	..	39 11.88	— 0.18	15.77	1 39 27.47	12.68
	β Arietis	49	38.2	40.3	41.4	51.7	52.8	54.1	55.6	56.5	6.6	7.9	10.0	47 54.10	0.17	15.76	1 48 9.69	14.97
	B. A. C. 790 (1st *)	50	21.6	23.6	25.0	..	..	..	..	..	51.9	53.4	55.7	27 38.53	0.08	15.71	2 27 54.16	12.13
	B. A. C. 790 (2d *)	51	..	..	..	36.6	38.1	39.4	40.7	42.1	..	..	..	27 39.38	0.18	15.71	2 27 54.91	12.13
	Lacaille 814	52	37.4	39.4	40.6	51.8	53.0	54.3	55.6	56.7	7.6	9.0	11.1	32 54.23	0.13	15.70	2 33 9.80	12.10
	B. A. C. 854	53	40.9	43.1	44.8	55.6	56.7	57.9	59.2	0.4	10.9	12.4	14.4	37 57.85	0.13	15.70	2 38 13.42	12.21
	Lacaille 873	54	33.3	35.4	36.7	47.0	48.4	49.8	50.9	52.1	2.4	3.5	5.8	40 49.57	— 0.13	+15.70	2 41 5.14	— 12.40

15. Hazy.
21. Through clouds.
24. Through clouds.
47. Preceded by a small star.
48. Followed by a small star.

r.
October 31, 23h. 40m. Image west 0.05. Clamp west.
October 31, 3h. Stars steady but rather faint.
October 31, 7h. Stars faint.

s.
October 29, 4h. to 7h. n. = + 0.040.
31, 18h. to 19h. 0.200.
0h. to 4h. + 0.060.
4h. to 8h. — 0.060.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Oct. 29, 15.0	+ 16.20	— 0.038	— 0.140
5.4	16.24	0.010	
31, 18.6	15.70	0.010	
1.6	15.77	— 0.070	
6.2	+ 15.81	+ 0.020	

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
31	Lalande 5315 . .	1	13.5	15.6	17.0	27.6	28.7	30.0	31.2	32.3	42.9	44.0	46.2	44 29.91	— 0.13	+15.69	2 44 45.47	— 12.34
	Lacaille 918 . .	2	22.1	24.5	25.9	37.3	38.5	39.9	41.1	42.3	53.5	55.1	57.1	48 39.75	0.13	15.69	2 48 55.31	11.73
	Lacaille 933 . .	3	50.2	52.6	54.1	4.5	5.6	6.9	8.2	9.3	19.8	21.3	23.2	51 6.88	0.13	15.68	2 51 22.43	12.23
	α Ceti	4	41.4	43.4	44.7	54.4	55.4	56.6	57.7	58.7	8.2	9.4	11.3	54 56.47	0.14	15.68	2 55 12.01	14.14
	B. A. C. 978 . .	5	31.3	33.2	34.6	45.7	47.0	48.3	49.7	50.9	1.5	3.0	5.2	1 48.22	0.13	15.67	3 2 3.76	11.84
	Lacaille 996 . .	6	5.6	7.5	9.0	19.6	20.7	22.0	23.3	24.4	34.6	36.4	38.3	4 21.95	0.13	15.67	3 4 37.49	12.14
	B. A. C. 1012 . .	7	38.6	40.7	42.1	52.8	54.1	55.4	56.8	57.8	8.3	9.8	12.1	8 55.32	0.13	15.66	3 9 10.85	11.92
	15 Eridani	8	50.8	53.2	54.5	5.1	6.1	7.5	8.8	9.9	19.8	21.3	23.6	12 7.33	0.13	15.66	3 12 22.86	12.18
	B. A. C. 1047 . .	9	25.9	28.0	29.6	40.1	41.4	42.6	43.9	45.3	56.0	57.2	59.4	14 42.67	0.13	15.66	3 14 58.20	11.83
	Lacaille 1079 . .	10	25.4	27.7	28.8	39.8	41.1	42.5	43.7	44.9	55.7	57.2	59.2	17 42.36	0.13	15.65	3 17 57.88	11.70
	Lacaille 1102 . .	11	32.4	34.6	36.0	47.3	48.3	49.6	51.2	52.5	2.9	4.5	6.7	20 49.64	0.13	15.65	3 21 5.16	11.62
	η Tauri	12	54.2	56.4	57.8	8.1	9.3	10.7	12.1	13.1	23.3	24.8	27.0	39 10.63	0.18	15.63	3 39 26.08	16.04
	Lacaille 1252 . .	13	23.3	25.3	26.9	38.3	39.4	40.6	42.2	43.4	54.5	55.9	58.1	45 40.72	0.13	15.62	3 45 56.21	11.18
	Lacaille 1288 . .	14	12.4	14.6	15.9	26.7	27.9	29.1	30.4	31.4	41.9	43.5	45.4	50 29.02	0.13	15.62	3 50 44.51	11.68
	* — 27° 17′. . .	15	16.5	18.8	20.1	31.1	32.2	33.6	35.0	36.2	46.7	48.0	50.2	54 33.49	0.13	15.61	3 54 48.97	11.49
	Lacaille 1326 . .	16	. .	. .	. .	33.4	34.8	36.1	37.6	38.9	50.6	52.0	54.2	56 42.20	6.20	15.61	3 56 51.61	10.71
	ο¹ Eridani	17	44.4	46.6	47.7	57.5	58.5	59.7	0.9	1.9	11.5	12.8	14.8	4 59.66	0.15	15.65	4 5 15.16	— 13.20
	δ Ursæ Minoris, S. P.	18	. .	. .	. .	. .	. .	. .	. .	54.0	34.0	11.0	9.0	25 12.00	9 29.94	15.81	18 15 57.87	+ 92.22
	γ Geminorum . . .	19	. .	23.1	24.3	34.3	35.6	36.8	38.1	39.3	49.0	50.2	. .	29 36.74	0.17	15.82	6 29 52.39	— 14.96
	ε Geminorum . . .	20	2.6	4.7	6.4	16.8	18.0	19.4	20.9	21.8	32.2	33.7	35.8	35 19.30	0.18	15.82	6 35 34.94	15.90
	O. Arg. S. 5654 .	21	6.1	8.5	9.6	20.6	21.8	23.2	24.8	25.8	36.5	38.1	40.5	40 23.23	— 0.13	15.82	6 40 38.92	10.44
	Lacaille 2461 . .	†22	5.1	6.4	8.0	9.2	11.9	. .	17.7	20.1	21.6	23.0	24.2	43 44.72	+ 0.14	15.82	6 44 0.68	10.96
	Lacaille 2462 .	†23	34.1	36.4	37.9	48.3	49.5	50.7	52.0	53.3	3.5	4.8	6.9	43 50.67	— 0.13	15.82	6 44 6.36	10.96
	O. Arg. S. 5961 .	24	45.0	47.1	48.4	59.5	0.5	2.0	3.3	4.5	15.1	16.3	18.8	52 1.86	0.13	15.82	6 52 17.55	10.56
	ω Geminorum . . .	25	6.4	8.6	9.8	50.5	51.6	52.8	54.3	55.4	5.9	7.1	9.3	53 52.88	0.18	15.82	6 54 8.52	15.64
	ζ Geminorum . . .	26	31.7	33.8	35.2	45.5	46.6	47.9	49.3	50.2	0.5	1.7	3.8	55 47.84	0.17	15.82	6 56 3.49	15.22
	Moon II . . .	27	29.0	31.2	32.6	42.9	44.0	45.4	46.7	47.8	58.2	59.4	1.7	59 45.35	0.17	15.83	7 0 1.01	. .
	τ Geminorum . . .	28	56.6	59.1	0.4	11.8	12.8	14.3	15.5	16.7	27.7	29.0	31.4	2 14.12	0.20	15.83	7 2 29.75	16.31
	Lacaille 2655 . .	29	5.3	7.4	8.9	. .	20.6	22.0	23.2	. .	35.2	36.8	38.7	6 22.01	— 0.12	15.83	7 6 37.72	10.55
	λ Geminorum . . .	30	46.2	48.1	49.3	59.5	0.5	. .	3.0	4.1	. .	. .	. .	10 55.81	+ 5.76	15.83	7 11 17.40	14.68
	δ Geminorum . . .	31	28.8	31.1	32.5	42.7	43.9	45.3	46.5	47.7	57.7	59.1	1.0	11 45.12	— 0.18	15.83	7 12 0.77	15.24
	B. A. C. 2455 . .	32	16.9	19.2	20.2	30.8	31.9	33.1	34.4	35.5	45.7	47.1	49.4	18 33.11	0.17	15.83	7 18 48.77	15.12
	Lacaille 2813 . .	33	57.6	59.4	0.8	11.8	13.0	14.2	15.6	16.8	27.4	28.9	31.0	22 14.23	0.13	15.83	7 22 29.93	10.60
	α² Geminorum . . .	34	22.6	25.0	26.3	37.7	39.1	40.3	41.6	43.0	54.2	55.5	58.0	25 40.30	0.20	15.83	7 25 55.93	— 16.22
1	δ Ursæ Minoris, S. P.	†35	. .	. .	. .	53.0	33.0	9.0	. .	. .	54.0	18.0	0.0	22 27.83	6 44.30	16.06	18 15 59.59	+ 92.63
	51 Cephei	†36	. .	. .	. .	2.0	24.0	49.5	13.0	31.0	. .	. .	. .	35 47.90	7.41	16.06	6 35 56.55	— 78.86
	Lacaille 2519 . .	37	39.2	41.5	43.2	54.3	55.4	56.9	58.4	59.6	10.7	12.2	14.5	48 56.90	0.06	16.06	6 49 12.90	10.11
	Lacaille 2528 . .	38	13.4	15.7	17.3	28.9	30.0	31.3	32.7	34.0	45.0	46.6	48.9	50 31.25	0.06	16.06	6 50 47.25	10.11
	ε Canis Majoris . .	†39	. .	. .	. .	59.6	0.7	2.0	3.4	4.6	15.3	16.6	19.0	53 7.65	5.76	16.06	6 53 17.95	10.45
	γ Canis Majoris . .	40	5.6	7.9	9.3	19.2	20.3	21.4	22.6	23.7	33.5	34.9	37.0	57 21.40	0.09	16.07	6 57 37.38	11.77
	Lacaille 2610 . .	41	13.3	15.7	17.1	28.5	29.6	30.9	32.5	33.5	44.5	46.0	48.3	0 30.90	0.06	16.07	7 0 46.91	10.23
	Lacaille 2634 . .	42	37.5	39.6	40.9	51.6	52.7	54.0	55.1	56.3	6.7	8.0	10.2	2 53.87	0.08	16.07	7 3 9.86	10.95
	O. Arg. S. 6311 .	43	31.1	33.3	34.6	45.2	46.4	47.6	48.9	50.0	0.1	1.4	3.9	3 47.50	0.08	16.07	7 4 3.49	10.95
	Lacaille 2666 . .	44	35.9	38.2	39.5	50.2	51.4	52.9	54.0	55.1	5.8	7.2	9.5	7 52.70	0.09	16.07	7 8 8.68	10.58
	λ Geminorum . . .	45	. .	. .	. .	59.4	0.5	1.6	3.0	4.0	13.6	15.0	17.1	10 6.78	5.41	16.07	7 10 17.44	14.72
	* — 30° 32′ . .	46	45.1	47.4	48.8	. .	. .	. .	. .	. .	16.2	17.6	20.0	14 2.52	0.01	16.07	7 14 18.58	10.20
	B. A. C. 2455 . .	47	16.7	18.8	20.1	30.6	31.7	32.8	34.2	35.2	45.6	46.9	49.0	18 32.87	0.22	16.07	7 18 48.72	15.16
	63 Geminorum . . .	48	8.9	11.0	12.2	. .	23.8	25.0	26.2	. .	37.6	38.8	40.9	19 24.93	0.21	16.07	7 19 40.79	15.15
	O. Arg. S. 7063 .	49	51.3	53.5	55.0	6.0	7.1	8.5	9.7	10.9	21.9	23.2	25.2	29 8.39	0.07	16.07	7 29 24.39	10.36
	α Canis Minoris . .	50	40.6	42.7	43.9	53.7	54.7	55.8	57.1	58.0	7.6	8.7	10.7	31 55.77	0.15	16.07	7 32 11.69	13.34
	O. Arg. S. 7286 .	51	. .	. .	. .	26.5	27.5	28.8	30.3	31.5	42.4	43.9	46.0	36 34.61	5.80	16.07	7 36 44.88	10.27
	O. Arg. S. 7376 .	52	. .	. .	. .	27.3	28.6	29.8	31.2	32.3	. .	. .	. .	39 29.84	0.12	16.07	7 39 45.79	10.54
	O. Arg. S. 7470 .	†53	41.9	44.5	45.8	56.8	58.1	59.6	1.0	2.2	13.3	14.6	16.8	42 59.51	0.06	16.07	7 43 15.52	10.23
	Moon II	54	59.7	1.9	3.1	13.4	14.5	15.7	16.9	18.1	28.1	29.4	31.4	50 15.65	0.19	16.07	7 50 31.53	. .
	5 Cancri	55	14.0	16.2	17.4	27.6	28.6	29.7	31.0	31.9	42.1	43.4	45.5	53 29.76	— 0.19	+16.07	7 53 45.64	— 14.34

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
1, 7.4	+ 16.07	+ 0.010	— 0.140

22. Closely preceded by a small star of same declination.
23. A small star 45″ to northward, of same A. R.
35–36. Very unsteady.
39. Unsteady.
53. Poor observation.

November 1, ... n. = — 0.170 s.

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860. 0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1	λ Ursæ Minoris, S. P.	1	- -	- -	- -	13.0	20.0	17.0	16.0	- -	- -	- -	- -	59 46.50	− 11.69	+16.08	20 59 50.89	+ 238.74
	η Cancri	2	18.8	21.1	22.3	32.8	33.8	34.8	36.1	37.1	47.5	48.6	50.8	24 34.89	0.21	16.08	8 24 50.76	− 14.35
	Venus II	3	1.3	3.4	4.7	14.3	15.3	16.5	17.7	18.7	28.2	29.4	31.3	59 16.44	− 0.14	16.12	11 59 32.42	1.39
	Polaris, S. P.	4	- -	- -	- -	33.0	51.0	3.0	13.0	33.0	9.0	18.5	56.0	6 42.06	+ 3 22.15	16.13	13 10 20.34	137.93
	Mercury II	5	6.8	8.9	10.1	20.0	21.0	22.2	23.4	24.4	33.9	35.3	37.1	28 22.10	− 0.12	16.13	13 28 38.11	0.20
	α Bootis	†6	54.7	56.7	57.7	8.1	9.2	10.5	11.8	12.9	22.9	24.2	26.4	9 10.46	0.20	16.14	14 9 26.40	9.79
2	Sun I	7	- -	- -	- -	8.1	9.3	10.5	11.7	12.9	- -	- -	- -	28 10.50	0.16	16.14	14 28 26.48	- -
	Sun II	8	8.8	10.9	12.3	22.1	23.2	24.4	25.7	26.7	36.5	37.9	39.9	30 24.40	0.11	16.14	14 30 40.43	- -
	β Aquarii	9	- -	- -	- -	6.6	7.8	8.9	10.1	11.1	20.6	21.8	23.8	24 13.84	5.16	15.59	21 24 24.27	13.17
	Lacaille 8849	10	- -	- -	- -	33.7	34.9	36.3	37.7	38.7	49.7	51.3	53.4	26 41.96	5.99	15.59	21 26 51.56	14.70
	ξ Aquarii	11	0.3	2.4	3.6	13.4	14.5	15.7	16.8	17.8	27.5	28.8	30.7	30 15.59	0.16	15.59	21 30 31.02	13.33
	B. A. C. 7549	12	- -	- -	- -	33.0	34.4	36.6	52.9	55.5	56.8	58.1	59.6	35 48.36	28.48	15.59	21 35 35.47	14.28
	Lacaille 8911	13	46.0	48.4	49.7	1.4	2.6	4.0	5.5	6.6	18.0	19.6	22.0	38 3.98	0.24	15.59	21 38 19.33	14.86
	Lacaille 8929	14	9.7	12.5	13.9	26.4	27.9	29.5	31.1	32.3	44.3	45.9	48.6	41 29.28	0.26	15.59	21 41 44.61	15.33
	* — 19° 48′	15	4.0	6.3	7.5	17.7	18.8	19.9	21.3	22.5	32.5	33.7	35.9	44 19.01	0.18	15.59	21 44 34.42	13.95
	O. Arg. S. 21710	16	58.0	0.3	1.5	11.8	12.8	14.0	15.4	16.4	26.5	27.9	30.0	45 14.05	0.18	15.59	21 45 29.46	13.95
	B. A. C. 7632	17	37.0	39.5	41.1	53.5	54.7	56.2	57.8	59.0	10.9	12.7	15.0	47 56.13	− 0.26	15.59	21 48 11.46	15.15
	O. Arg. S. 21772	18	36.7	38.2	39.6	41.0	43.6	- -	49.5	52.2	53.5	54.8	56.4	51 16.55	+ 0.08	15.59	21 51 32.22	14.20
	Lacaille 8982	19	5.8	8.0	9.3	20.0	21.0	22.4	23.7	24.9	35.2	36.6	38.8	51 22.34	− 0.20	15.59	21 51 37.73	14.20
	Lacaille 9000	20	4.0	6.2	7.5	19.2	20.5	21.9	23.3	24.5	35.8	37.3	39.5	54 21.79	0.23	15.59	21 54 37.15	14.72
	13 Piscis Australis	21	0.6	2.9	4.4	15.6	16.8	18.3	19.6	20.7	31.7	33.2	35.4	56 18.11	0.22	15.59	21 56 33.48	14.54
	B. A. C. 7694	22	8.9	11.3	12.5	23.0	24.2	25.5	26.7	27.7	38.1	39.5	41.5	59 25.35	0.19	15.59	21 59 40.75	14.09
	Lacaille 9046	23	7.0	9.5	11.0	23.0	24.1	25.5	27.0	28.2	40.0	41.4	43.8	3 25.50	0.24	15.59	22 3 40.85	14.80
	B. A. C. 7745	24	34.2	36.3	37.9	48.4	49.6	50.9	52.3	53.4	3.9	5.4	7.5	5 50.89	0.21	15.59	22 6 6.27	14.22
	* — 32° 30′	25	- -	- -	- -	49.3	50.4	51.9	53.4	54.5	- -	- -	- -	7 51.90	0.28	15.59	22 8 7.21	14.60
	Lacaille 9088	26	16.0	18.4	19.8	31.3	32.6	33.9	35.4	36.5	47.9	49.3	51.6	9 33.88	0.23	15.59	22 9 49.24	14.58
	Lacaille 9109	27	47.9	50.1	51.5	2.3	3.5	4.8	6.1	7.2	17.8	19.2	21.3	14 4.70	0.21	15.59	22 14 20.08	14.19
	π Aquarii	28	50.2	52.4	53.4	3.1	4.2	5.2	6.4	7.4	17.0	18.2	20.2	18 5.25	0.14	15.59	22 18 20.70	− 13.08
	B. A. C. 7851	29	- -	- -	- -	6.0	19.0	33.5	49.5	1.7	- -	- -	- -	23 33.94	1.10	15.59	22 23 48.43	+ 5.32
	B. A. C. 7872	30	23.0	25.5	26.8	- -	- -	- -	- -	- -	54.7	56.4	58.7	28 40.85	0.18	15.58	22 28 56.25	− 14.42
	Piazzi XXII, 154	31	- -	- -	- -	42.0	43.2	44.6	46.1	47.2	- -	- -	- -	28 44.62	0.28	15.58	22 28 59.92	14.42
	Lacaille 9197	32	- -	- -	- -	52.6	53.9	55.4	56.7	57.9	9.4	10.9	13.3	31 1.26	6.24	15.58	22 31 10.60	14.49
	Lacaille 9208	33	6.4	8.7	10.0	20.6	21.7	23.0	24.4	25.5	35.9	37.1	39.3	33 22.96	0.20	15.58	22 33 38.34	14.02
	Lacaille 9221	34	- -	- -	- -	21.3	22.4	23.7	25.0	25.9	36.2	37.6	39.7	35 28.98	5.58	15.58	22 35 38.98	13.93
	Lacaille 9246	35	57.2	59.7	1.0	12.7	14.0	15.3	16.8	17.9	29.3	30.8	33.2	39 15.26	0.23	15.58	22 39 30.61	14.38
	Lacaille 9271	36	51.3	53.8	55.2	6.8	8.0	9.5	10.8	12.0	23.5	25.1	27.4	42 9.40	0.23	15.58	22 42 24.75	14.36
	γ Piscis Australis	†37	24.9	27.2	28.7	40.4	41.5	42.9	44.5	45.6	57.0	58.4	0.8	44 42.90	0.23	15.58	22 44 58.25	14.34
	δ Piscis Australis	38	51.8	54.2	55.6	7.2	8.5	10.0	11.4	12.6	23.9	25.4	27.8	48 9.85	0.23	15.58	22 48 25.20	14.30
	B. A. C. 7998	39	26.8	29.4	30.7	42.9	44.1	45.7	47.1	48.4	0.0	1.6	4.1	50 45.53	0.25	15.58	22 51 0.86	14.40
	Lacaille 9331	40	30.2	32.5	33.8	44.7	45.8	47.1	48.4	49.5	0.1	1.5	3.6	52 47.02	0.21	15.58	22 53 2.39	13.99
	Lacaille 9356	41	45.7	47.9	49.4	0.8	2.0	3.3	4.7	5.8	16.9	18.4	20.8	56 3.25	0.22	15.58	22 56 18.61	14.14
	B. A. C. 8045	42	44.5	47.3	48.8	1.3	2.8	4.3	5.8	7.1	19.4	21.3	23.7	59 4.21	0.26	15.58	22 59 19.53	14.46
	Weisse 1276	43	- -	- -	- -	- -	- -	- -	29.6	32.0	33.2	34.5	35.7	1 33.00	34.11	15.58	23 1 14.47	13.58
	γ Piscium	44	37.6	39.6	40.7	50.4	51.5	52.6	53.9	54.8	4.3	5.6	7.5	9 52.59	0.14	15.58	23 10 8.03	13.50
	Lacaille 9444	45	- -	- -	- -	- -	- -	- -	42.8	45.8	47.2	48.9	50.3	12 47.00	40.45	15.58	23 12 22.13	14.09
	Lacaille 9458	†46	55.0	57.5	58.7	10.2	11.5	12.7	14.0	15.4	26.5	28.0	30.2	16 12.70	0.23	15.58	23 16 28.05	13.98
	Lacaille 9473	47	26.5	28.8	30.0	41.1	42.3	43.5	44.8	46.0	56.9	58.2	0.4	18 43.50	0.21	15.58	23 18 58.87	13.87
	Lacaille 9489	48	42.9	45.2	46.4	57.3	58.5	59.7	1.2	2.3	12.7	14.2	16.4	20 59.71	0.21	15.58	23 21 15.08	13.81
	Lacaille 9500	49	- -	9.5	10.9	22.7	24.1	25.6	27.1	28.4	39.9	41.5	- -	23 25.52	0.26	15.58	23 23 40.84	14.02
	Lacaille 9516	50	40.9	43.3	44.9	56.2	57.5	58.9	0.3	1.5	12.5	14.2	16.5	25 58.79	0.23	15.58	23 26 14.14	13.89
	Lacaille 9534	51	- -	- -	- -	36.8	38.0	39.4	40.8	41.8	53.3	54.8	57.1	29 45.25	6.15	15.58	23 29 54.68	13.87
	Lacaille 9547	†52	7.2	9.8	11.0	22.6	23.8	25.3	26.6	27.8	39.3	40.9	43.1	32 25.22	0.23	15.58	23 32 40.57	13.86
	Lacaille 9568	53	23.4	25.8	27.0	38.3	39.5	40.8	42.2	43.3	54.3	55.7	57.9	35 40.75	0.22	15.58	23 35 56.11	13.76
	Lacaille 9579	†54	- -	- -	- -	22.8	24.3	26.5	43.2	45.8	47.2	48.7	50.1	37 38.58	29.03	15.58	23 37 25.13	13.70
	O. Arg. S. 136	55	- -	- -	- -	36.7	37.9	39.1	40.3	41.4	51.6	52.8	55.0	14 44.35	− 5.52	+15.57	0 14 54.40	− 13.44

6. Unsteady.
37. Very closely preceded by a faint companion.
46. Faint.
52. Through clouds.
54. Duplex.

November 2, 1h. 55m. Image east $\overset{\text{r.}}{0.05}$. Clamp west.
8h. 0m. Stars blurred.

November 1–2, 11h. to 15h. n. = $+\overset{\text{s.}}{0.141}$.
1–2, 21h. to 2h. 0.100.
1–2, 7h. to 10h. + 0.020.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 2, 2.8	+ 15.55	− 0.008	− 0.140

E.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
2	O. Arg. S. 202 . .	1	16.0	18.1	19.5	29.8	30.8	32.2	33.3	34.4	44.7	45.9	48.0	20 32.06	— 0.19	+15.57	0 20 47.44	— 13.41
	12 Ceti	2	36.7	38.8	39.9	49.7	50.7	51.9	53.2	54.1	3.6	4.8	6.7	22 51.83	0.15	15.57	0 23 7.25	13.58
	O. Arg. S. 284 . .	3	22.0	24.4	25.8	36.5	37.7	39.1	40.5	41.6	52.3	53.7	55.8	28 39.04	0.21	15.57	0 28 54.40	13.29
	β Ceti	4	15.8	17.9	19.1	29.3	30.4	31.7	32.9	33.9	44.0	45.5	47.5	36 31.64	0.18	15.57	0 36 47.03	13.42
	Lacaille 203 . .	5	..	..	..	9.7	10.8	12.2	13.5	14.5	24.8	26.2	28.4	39 17.51	5.63	15.57	0 39 27.45	13.27
	Polaris	†6	26.0	20.0	12.0	3.5	40.5	..	20.5	54.0	44.5	35.5	28.0	10 6.55	1.63	15.56	1 10 20.48	137.79
		†7	55.0	18.5	5.0	39.0	21.0	9.0	58.5	38.0	2.0	54.0	12.0					
	β Arietis	8	38.3	40.5	41.7	52.0	53.1	54.3	55.7	56.8	6.8	8.2	10.3	46 54.34	0.11	15.56	1 47 9.79	14.98
	1 Cancri	9	45.6	47.7	48.9	59.0	0.2	1.4	2.7	3.7	13.5	14.8	16.8	49 1.30	0.14	15.51	7 49 16.67	14.36
	5 Cancri	10	14.7	16.7	18.0	28.1	29.2	30.5	31.7	32.7	42.6	43.9	46.0	53 30.37	— 0.14	15.51	7 53 45.74	— 14.38
	λ Ursæ Minoris, S. P.	11	..	..	..	26.0	32.0	28.0	24.0	33.0	..	..	..	59 28.60	+ 8.79	15.51	19 59 52.90	+ 240.52
	Lacaille 3209 . .	12	..	..	..	12.7	14.4	16.7	34.3	37.1	38.4	40.0	41.3	8 29.36	— 30.24	15.51	8 8 14.63	— 10.18
	Lacaille 3231 . .	13	53.3	55.7	56.9	8.2	9.3	10.7	12.0	13.4	24.3	25.7	28.0	10 10.68	0.17	15.51	8 10 26.02	10.26
	Lacaille 3267 . .	14	4.6	7.0	8.4	19.6	20.8	22.3	23.6	24.7	35.8	37.2	39.6	14 22.14	0.17	15.51	8 14 37.48	10.26
	Lacaille 3290 . .	15	46.4	48.8	50.1	1.4	2.6	4.0	5.4	6.6	17.5	19.1	21.3	17 3.93	0.18	15.51	8 17 19.26	10.21
	Lacaille 3312 . .	16	11.8	14.2	15.6	26.9	28.2	29.5	31.0	32.2	43.3	44.8	47.1	19 29.51	0.18	15 51	8 19 44.84	10.19
	B. A. C. 2843 . .	17	16.2	18.4	19.8	31.2	32.3	33.7	35.2	36.3	47.5	49.0	51.2	21 33.71	0.18	15.51	8 21 49.04	10.22
	η Cancri	18	19.4	21.6	22.8	33.1	34.3	35.6	36.8	37.9	48.0	49.4	51.5	24 35.49	0.14	15.50	8 24 50.85	14.39
	* — 30° 49′ . .	19	11.0	13.2	14.6	25.9	27.1	28.5	29.8	30.9	42.1	43.5	45.8	29 28.40	0.17	15.50	8 29 43.73	10.28
	Lacaille 3419 . .	20	12.4	14.9	16.5	27.6	28.6	30.1	31.4	32.7	43.7	45.2	47.5	30 30.05	0.17	15.50	8 30 45.38	10.28
	Lacaille 3469 . .	21	..	11.6	13.0	24.6	25.7	27.0	28.5	29.6	40.8	42.2	..	36 27.00	0.19	15.50	8 36 42.31	10.21
	Moon II	22	47.0	49.0	50.3	0.4	1.5	2.7	3.9	5.0	14.9	16.3	18.3	39 2.66	0.14	15.50	8 39 18.02	..
	Lacaille 3546 . .	23	18.5	21.0	22.3	33.5	34.7	36.1	37.4	38.6	49.4	51.0	53.3	43 35.98	0.17	15.50	8 43 51.31	10.36
	Lacaille 3574 . .	24	20.4	22.7	24.0	35.5	36.8	38.2	39.5	40.7	52.0	53.5	55.7	46 38.09	0.18	15.50	8 46 53.41	10.22
	σ² Cancri	25	28.6	30.7	32.0	42.0	43.1	44.3	45.6	46.6	56.5	57.7	59.8	49 44.26	0.14	15.50	8 49 59.62	13.74
	κ Cancri	26	52.3	54.5	55.5	5.4	6.6	7.7	8.9	10.0	19.6	20.8	22.8	0 7.64	0.14	15.50	9 0 23.00	13.29
	83 Cancri	27	52.2	54.3	55.6	5.7	6.8	8.1	9.3	10.4	20.4	21.6	23.7	11 8.01	0.14	15.50	9 11 23.37	13.60
	ε Leonis	†28	..	..	..	..	51.0	52.3	53.6	..	..	..	..	37 52.30	0.21	15.50	9 38 7.59	13.67
3	α Hydræ	29	24.4	26.6	27.7	37.5	38.5	39.8	41.0	42.0	51.4	52.8	54.8	20 39.68	0.14	14.90	9 20 54.44	12.03
	ξ Leonis . . .	30	6.7	8.5	9.9	19.8	20.9	22.1	23.3	24.4	34.2	35.3	37.3	24 22.04	0.14	14.90	9 24 36.80	13.14
	Moon II	31	17.6	19.8	21.0	31.0	32.2	33.4	34.5	35.5	45.4	46.4	48.7	26 33.23	0.14	14.90	9 26 47.99	..
	μ Leonis	32	29.7	31.9	33.2	44.3	45.4	46.6	48.0	49.2	59.8	1.2	3.4	44 46.62	0.15	14.90	9 45 1.37	13.65
	ν Leonis	33	24.1	26.1	27.2	37.4	38.3	39.6	40.7	41.8	51.5	52.8	54.8	50 39.48	0.14	14.90	9 50 54.24	12.93
	π Leonis	34	31.5	33.4	34.6	..	45.5	46.7	48.0	..	58.5	59.7	1.9	52 46.67	0.13	14.90	9 53 1.44	12.69
	Venus II . . .	35	..	..	..	..	..	..	58.8	0.9	2.4	3.4	4.8	4 2.06	— 33.42	14.95	12 3 43.59	1.35
	Polaris, S. P. . .	36	27.0	5.5	26.5	2.0	10.0	52.0	46.5	13.5	23.0	34.0	38.5	57 14.41	+ 12 48.40	14.93	1 10 17.74	137.63
	α Virginis	37	31.1	33.1	34.3	44.3	45.3	46.4	47.6	48.6	58.2	59.5	1.5	17 46.35	— 0.22	14.93	13 18 1.06	11.82
	Mercury II . . .	38	9.0	11.0	12.2	22.1	23.0	24.3	25.6	26.6	36.2	37.5	39.3	39 24.25	0.21	14.93	13 39 38.97	0.20
	α Bootis	39	55.7	57.7	59.0	9.5	10.5	11.7	12.9	14.0	24.1	25.5	27.5	9 11.65	0.19	14.92	14 9 26.38	9.81
4	Sun I	40	49.0	51.0	52.4	2.3	3.4	4.7	5.9	7.0	16.9	18.2	20.2	36 4.64	0.23	14.91	14 36 19.32	..
	Sun II	41	3.5	5.5	7.0	17.1	18.0	19.3	20.5	21.7	31.5	32.7	34.7	38 19.23	0.23	14.91	14 38 33.91	..
	α Herculis	42	55.9	58.0	59.3	9.2	10.1	11.5	12.8	13.7	23.5	24.7	26.9	8 11.42	0.19	14.87	17 8 26.10	— 10.10
	δ Ursæ Minoris . .	43	29.0	3.5	23.5	..	23.5	44.5	4.7	21.5	1.0	22.0	55.2	15 46.84	5.85	14.85	18 15 55.84	+ 93.55
	α Lyræ	44	45.5	48.1	49.5	1.9	3.3	4.8	6.4	7.6	19.7	21.4	23.9	32 4.74	0.20	14.84	18 32 19.38	— 7.39
	λ Piscis Australis .	45	4.9	7.2	8.4	19.5	20.7	22.0	23.3	24.4	35.4	36.6	39.0	6 21.95	0.23	14.78	22 6 36.50	14.33
	θ Aquarii	46	10.2	12.3	13.6	23.3	24.3	25.5	26.6	27.5	37.3	38.7	40.5	9 25.44	0.20	14.78	22 9 40.02	13.40
	ρ Aquarii	47	33.4	35.4	36.6	46.4	47.4	48.6	49.8	50.8	0.4	1.6	3.6	12 48.55	0.20	14.78	22 13 3.13	13.38
	Lacaille 9135 . .	48	33.1	35.5	36.7	47.6	48.7	50.0	51.4	52.5	3.2	4.6	6.8	19 50.01	0.23	14.78	22 20 4.56	14.19
	Lacaille 9159 . .	49	47.4	49.7	51.2	2.5	3.7	5.2	6.5	7.6	18.8	20.3	22.6	23 5.05	0.24	14.78	22 23 19.59	14.40
	Lacaille 9169 . .	50	23.7	26.1	27.5	38.6	39.9	41.3	42.6	43.8	54.7	56.3	58.4	25 41.17	— 0.23	14.78	22 25 55.72	14.31
	B. A. C. 7872 . .	51	58.7	0.1	1.8	3.1	6.0	..	17.2	19.9	21.3	22.7	24.3	28 41.51	+ 0.06	14.78	22 28 56.35	14.40
	Piazzi XXII, 154 .	52	27.6	30.0	31.4	42.8	43.9	45.4	46.7	48.0	59.2	0.7	3.0	28 45.34	— 0.24	14.78	22 28 59.88	14.40
	B. A. C. 7895 . .	53	15.1	17.5	18.8	30.3	31.4	32.7	34.3	35.4	46.5	48.0	50.3	32 32.75	0.24	14.78	22 32 47.29	14.31
	Lalande 44373 . .	54	21.3	23.4	24.6	34.4	35.5	36.7	37.9	38.9	48.6	49.8	1.8	34 36.63	— 0.21	+14.78	22 34 51.20	— 13.50

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
3, 9.6	+ 14.90	— 0.009	— 0.040
4, 20.5	+ 14.81	— 0.017	— 0.202

6–7. Steady.
28. Cloudy.

November 3. Found that one of the micrometer wires collided with set C, thereby disturbing the wires. Mr. Clark removed the diaphragm and corrected the defect.

r.
November 4, 1h. 30m. Image west 0.185. Clamp west.
Image east 0.345. Clamp east.
After adjustment,
Image east 0.08. Clamp east.
Image east 0.15. Clamp west.

s.
November 3, ... n. = + 0.020.
3–4, 12h. to 19h. + 0.074.
3–4, 22h. to 0h. 0.000.
3–4, 0h. to 2h. — 0.033.

TE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Corrections. Inst.	Corrections. Clock.	Observed R. Ascension.	Reduct'n to 1860. 0
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 4	65 Aquarii	1	22. 7	24. 7	26. 0	35. 9	36. 9	38. 1	39. 4	40. 3	50. 0	51. 2	53. 2	35 38. 04	— 0. 21	+14. 78	22 35 52. 61	— 13. 50
	Lacaille 9248 . .	2	8. 6	11. 2	12. 7	24. 5	25. 7	27. 3	28. 6	29. 8	41. 4	43. 0	45. 4	39 27. 11	0. 25	14. 78	22 39 41. 64	14. 42
	Lacaille 9271 . .	3	52. 2	54. 7	56. 0	7. 6	8. 9	10. 3	11. 7	12. 8	24. 2	25. 7	28. 1	42 10. 20	0. 24	14. 77	22 42 24. 73	14. 33
.	λ Aquarii	4	2. 3	4. 5	5. 4	15. 1	16. 1	17. 3	18. 6	19. 6	29. 1	30. 4	32. 4	45 17. 33	0. 20	14. 77	22 45 31. 90	13. 41
	α Piscis Australis .	5	36. 6	39. 0	40. 4	51. 6	52. 8	54. 1	55. 5	56. 7	7. 7	9. 1	11. 5	49 54. 09	0. 23	14. 77	22 50 8. 63	14. 22
	Lacaille 9330 . .	6	25. 0	27. 2	28. 5	39. 3	40. 5	41. 8	43. 2	44. 2	54. 9	56. 4	58. 6	52 41. 78	0. 23	14. 77	22 52 56. 32	13. 98
	O. Arg. S. 22544 .	7	. .	. .	. .	46. 2	47. 5	48. 7	49. 9	51. 2	. .	. .	. .	52 48. 70	0. 28	14. 77	22 53 3. 19	13. 98
	Lacaille 9356 . .	8	46. 5	48. 9	50. 3	1. 4	2. 6	4. 0	5. 4	6. 6	17. 8	19. 3	21. 6	56 4. 04	0. 24	14. 77	22 56 18. 57	14. 11
	B. A. C. 8045 . .	9	45. 6	48. 2	49. 6	2. 1	3. 4	5. 0	6. 6	7. 9	20. 3	21. 8	24. 4	59 4. 99	0. 26	14. 77	22 59 19. 50	14. 42
	* — 20° 12′ . . .	10	37. 0	39. 2	40. 4	50. 9	51. 8	53. 0	54. 4	55. 5	5. 5	6. 9	9. 0	2 53. 05	— 0. 22	14. 77	23 3 7. 60	13. 74
	O. Arg. S. 22666 .	11	43. 3	45. 4	46. 6	56. 8	57. 9	59. 0	0. 3	1. 4	. .	. .	. .	4 53. 84	+ 5. 00	14. 77	23 5 13. 61	13. 68
	O. Arg. S. 22670 .	12	. .	. .	. .	. .	. .	10. 3	11. 5	12. 5	22. 5	23. 9	25. 9	5 17. 77	— 7. 78	14. 77	23 5 24. 76	13. 68
	Lacaille 9426 . .	13	49. 9	52. 4	53. 8	4. 8	5. 9	7. 4	8. 7	9. 9	20. 7	22. 2	24. 3	9 7. 27	0. 23	14. 77	23 9 21. 81	13. 95
	Lacaille 9440 . .	14	25. 2	27. 9	29. 5	42. 0	43. 4	45. 0	46. 5	47. 8	0. 1	1. 8	4. 4	11 44. 87	0. 26	14. 76	23 11 59. 37	14. 26
	Lacaille 9479 . .	15	20. 5	22. 9	24. 1	34. 6	35. 8	37. 2	38. 5	39. 5	49. 8	51. 3	53. 2	19 37. 04	0. 22	14. 76	23 19 51. 58	13. 74
	Lacaille 9499 . .	16	59. 4	1. 6	3. 0	13. 9	15. 0	16. 2	17. 4	18. 5	29. 0	30. 4	32. 5	23 16. 08	0. 22	14. 76	23 23 30. 62	13. 74
	O. Arg. S. 22897 .	17	28. 8	31. 0	32. 2	42. 5	43. 7	45. 0	46. 3	47. 4	57. 5	58. 8	0. 9	25 44. 92	0. 22	14. 76	23 25 59. 46	13. 66
	Lacaille 9547 . .	18	8. 2	10. 5	11. 9	23. 6	24. 8	26. 3	27. 6	28. 8	40. 2	41. 6	44. 0	32 26. 14	0. 25	14. 76	23 32 40. 65	13. 83
	Lacaille 9567 . .	19	. .	. .	.	40. 4	41. 8	43. 3	44. 8	46. 0	58. 0	59. 4	2. 1	35 49. 48	6. 54	14. 76	23 35 57. 70	13. 88
	Lacaille 9610 . .	20	16. 4	18. 5	20. 0	30. 8	31. 9	33. 3	34. 6	35. 6	46. 1	47. 6	49. 7	42 33. 14	0. 23	14. 76	23 42 47. 67	13. 63
	Lacaille 9637 . .	21	24. 3	26. 6	28. 0	39. 3	40. 4	41. 8	43. 2	44. 4	55. 5	57. 0	59. 4	46 41. 81	0. 24	14. 75	23 46 56. 32	13. 65
	Weisse 1002 . .	22	5. 8	8. 0	9. 2	18. 8	19. 9	21. 0	22. 3	23. 3	32. 7	34. 0	36. 0	49 21. 00	0. 20	14. 75	23 49 35. 55	13. 52
	O. Arg. S. 23185 .	23	32. 7	34. 9	36. 2	46. 8	47. 9	49. 2	50. 5	51. 6	2. 0	3. 2	5. 4	53 49. 13	0. 22	14. 75	23 54 3. 66	13. 54
	Lacaille 9701 . .	24	. .	. .	. .	53. 4	54. 5	55. 8	57. 0	58. 2	8. 6	10. 0	12. 2	56 1. 21	5. 72	14. 75	23 56 10. 24	13. 53
	Weisse 1209. . .	25	52. 6	54. 6	55. 7	5. 4	6. 5	7. 7	8. 8	9. 7	19. 3	20. 6	22. 4	59 7. 57	0. 20	14. 75	23 59 22. 12	13. 55
	Weisse 1250 . .	26	. .	. .	. .	8. 2	9. 2	10. 5	11. 6	12. 6	22. 1	23. 3	25. 3	1 15. 35	5. 19	14. 75	0 1 24. 91	13. 58
	Weisse 51 . . .	27	38. 9	40. 8	41. 9	51. 7	52. 7	54. 0	55. 0	56. 1	5. 6	7. 0	8. 9	3 53. 87	0. 20	14. 75	0 4 8. 42	13. 60
	γ Pegasi	28	. .	. .	. .	58. 8	59. 8	1. 0	2. 3	3. 2	13. 0	14. 3	16. 3	6 6. 12	5. 37	14. 75	0 6 15. 50	13. 75
	B. A. C. 42 . . .	29	30. 2	32. 2	33. 4	43. 1	44. 1	45. 3	46. 5	47. 6	57. 0	58. 4	0. 2	8 45. 27	0. 20	14. 75	0 8 59. 82	13. 63
	Neptune . . .	30	35. 5	37. 6	38. 7	48. 4	49. 5	50. 6	51. 8	52. 8	2. 3	3. 6	5. 5	15 50. 57	0. 20	14. 75	0 16 5. 12	- -
	Lacaille 84 . . .	31	37. 8	40. 3	41. 6	53. 0	54. 3	55. 7	57. 0	58. 2	9. 4	10. 9	13. 1	18 55. 57	0. 22	14. 75	0 19 10. 10	13. 33
	Lacaille 98 . . .	32	8. 6	11. 0	12. 3	23. 5	24. 7	26. 2	27. 6	28. 7	39. 6	41. 1	43. 5	21 26. 07	0. 21	14. 74	0 21 40. 60	13. 32
	Weisse 453 . . .	33	. .	51. 4	52. 7	2. 4	3. 5	4. 6	5. 9	7. 0	16. 6	17. 8	. .	27 4. 66	0. 22	14. 74	0 27 19. 18	13. 80
	* + 1° 5′ . . .	34	15. 5	17. 4	18. 7	28. 3	29. 4	30. 6	31. 8	32. 8	42. 2	43. 4	45. 4	29 30. 50	0. 20	14. 74	0 29 45. 04	13. 69
	* — 18° 22′ . .	35	. .	.	. .	54. 5	55. 6	56. 8	58. 1	59. 2	. .	. .	. .	32 56. 84	0. 25	14. 74	0 33 11. 33	13. 37
	* — 18° 19′ . .	36	. .	. .	. .	22. 0	23. 3	25. 5	41. 1	43. 6	44. 8	46. 0	47. 5	33 36. 72	27. 25	14. 74	0 33 24. 21	13. 37
	β Ceti	37	16. 5	18. 8	20. 0	30. 2	31. 3	32. 5	33. 8	34. 9	44. 9	46. 2	48. 2	36 32. 48	0. 20	14. 74	0 36 47. 02	13. 40
	Lacaille 219 . .	38	47. 5	49. 9	51. 2	2. 4	3. 6	5. 0	6. 4	7. 6	18. 3	19. 9	22. 2	41 4. 91	— 0. 21	14. 74	0 41 19. 44	13. 12
	Polaris	†39	33. 0	27. 5	17. 0	10. 0	47. 5	7. 0	23. 5	12. 0	45. 0	28. 0	19. 0	57 13. 59	+ 12 51. 08	14. 74	1 10 19. 41	137. 14
	θ Ceti	40	45. 3	47. 3	48. 4	58. 2	59. 3	0. 5	1. 7	2. 7	12. 4	13. 6	15. 6	16 0. 46	— 0. 20	14. 73	1 16 14. 99	13. 48
	ο Leonis	41	23. 5	25. 5	26. 9	36. 6	37. 7	38. 8	40. 2	41. 1	50. 7	52. 0	54. 0	33 38. 82	+ 0. 07	14. 63	9 33 53. 52	13. 00
	ε Leonis	42	36. 3	38. 6	39. 9	50. 5	51. 7	53. 0	54. 3	55. 4	5. 8	7. 1	9. 3	37 52. 90	0. 09	14. 63	9 38 7. 62	13. 73
	μ Leonis	43	29. 8	32. 1	33. 4	44. 3	45. 4	46. 7	48. 0	49. 1	59. 8	1. 2	3. 3	44 46. 65	0. 09	14. 62	9 45 1. 36	13. 68
	π Leonis	44	31. 5	33. 6	34. 9	44. 6	45. 7	46. 9	48. 1	49. 1	58. 7	59. 9	2. 0	52 46. 82	0. 06	14. 62	9 53 1. 50	12. 72
	α Leonis	45	37. 4	39. 5	40. 7	50. 7	51. 7	52. 9	54. 1	55. 1	4. 9	6. 1	8. 2	0 52. 85	0. 07	14. 62	10 1 7. 54	12. 77
	γ¹ Leonis	46	57. 3	59. 5	0. 8	11. 1	12. 2	13. 4	14. 7	15. 7	25. 9	27. 2	29. 3	12 13. 37	0. 08	14. 61	10 12 28. 06	13. 11
	Moon II	47	10. 2	12. 3	13. 5	23. 4	24. 4	25. 7	26. 9	27. 9	37. 6	38. 8	40. 8	13 25. 59	0. 06	14. 61	10 13 40. 26	- -
	Venus II . . .	†48	. .	29. 7	31. 0	40. 5	41. 7	43. 0	44. 1	45. 2	54. 6	55. 9	. .	5 42. 86	+ 0. 04	14. 58	12 5 57. 48	1. 33
	Polaris, S. P. .	49	49. 0	56. 0	3. 0	13. 0	33. 0	. .	57. 0	21. 5	34. 5	46. 0	48. 0	10 9. 64	— 4. 63	14. 56	1 10 19. 57	137. 31
		50	19. 0	58. 0	9. 0	38. 0	55. 0	8. 0	21. 0	40. 0	13. 5	21. 0	3. 5					
	Mercury II . . .	51	49. 3	51. 4	52. 6	2. 5	3. 6	4. 8	5. 9	7. 0	16. 4	17. 7	19. 8	45 4. 64	+ 0. 05	14. 55	13 45 19. 24	0. 19
	α Bootis	52	55. 7	58. 0	59. 2	9. 5	10. 5	11. 7	13. 0	14. 2	24. 1	25. 5	27. 7	9 11. 74	0. 08	14. 54	14 9 26. 36	9. 82
5	Sun I	53	47. 0	49. 2	50. 5	0. 5	1. 6	2. 8	4. 0	5. 2	15. 1	16. 4	18. 4	40 2. 79	0. 04	14. 53	14 40 17. 36	- -
	Sun II	54	1. 9	4. 1	5. 3	15. 2	16. 4	17. 7	19. 0	20. 0	29. 8	31. 0	33. 1	42 17. 59	0. 04	14. 53	14 42 32. 16	- -
	α Herculis . . .	55	55. 9	58. 1	59. 3	9. 2	10. 2	11. 5	12. 8	13. 8	23. 5	24. 9	26. 9	8 11. 46	+ 0. 07	+14. 48	17 8 26. 01	— 10. 09

39. First part steady; latter part less so.
48. Unsteady.

November 5-6, 11h. to 19h. n. = + 0.060 (s.)
23h. to 2h. — 0. 100.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 4, 11. 5	+ 14. 59	— 0. 019	— 0. 054

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Redu 18
1862.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	
Nov. 5	Moon II	1	12.4	14.5	15.7	25.9	26.7	27.8	29.1	30.1	39.8	41.0	42.8	0 27.80	+ 0.05	+14.04	11 0 41.99	
E.	δ Leonis	2	21.5	23.8	25.0	35.5	36.6	37.8	39.1	40.2	50.3	51.7	53.9	6 37.76	0.08	14.04	11 6 51.88	—
Y.	Venus II	3	47.1	49.2	50.3	59.9	1.1	2.3	3.4	4.5	14.0	15.2	17.2	8 2.20	0.05	14.00	12 8 16.25	
	α Virginis	†4	31.8	33.8	35.0	45.0	45.9	47.2	48.4	49.3	58.9	0.3	2.3	17 47.08	0.04	13.99	13 18 1.11	
	Mercury II	5	35 2	37.3	38.5	48.2	49.4	50.7	51.8	52.8	2.5	3.7	5.6	50 50.52	+ 0.05	13.99	13 51 4.56	
	α Bootis	6	..	..	..	..	..	..	..	46.6	47.8	49.0	50.5	9 48.48	— 36.06	13.98	14 9 26.40	
6	Sun I	†7	..	..	..	14.3	15.7	17.6	33.2	35.7	36.8	38.2	39.4	44 28.86	— 26.74	13.98	14 44 16.10	
	Sun II	8	1.4	3.4	4.7	..	..	..	..	..	29.2	30.5	32.6	46 16.97	+ 0.08	13.98	14 46 31.03	
	α Herculis	†9	56.3	58.5	59.7	9.7	10.8	12.0	13.3	14.3	24.1	25.5	27.5	8 11.97	0.07	13.96	17 8 26.00	
	α Ophiuchi	10	7.1	9.3	10.5	20.4	21.5	22.6	23.8	24.9	34.6	35.9	38.0	28 22.60	0.07	13.96	17 28 36.63	
	β Lyræ	11	30.9	33.3	34.8	46.3	47.6	49.0	50.4	51.6	2.9	4.4	6.8	44 48.91	0.10	13.95	18 45 2.96	
	ι Piscium	†12	29.3	31.3	32.5	42.1	..	44.6	..	46.8	56.5	57.6	59.5	32 44.47	+ 0.06	13.92	23 32 58.45	
	Lacaille 9576	13	..	..	..	28.3	29.4	30.9	32.4	33.5	45.0	46.4	48.9	36 36.85	— 5.89	13.92	23 36 44.88	
	O. Arg. S. 23054	14	45.1	47.6	48.8	59.9	1.0	2.5	3.8	4.9	15.6	16.9	19.2	41 2.30	+ 0.12	13.92	23 41 16.34	
	Lacaille 9595	15	46.2	48.4	49.9	0.8	2.0	3.4	4.7	5.9	16.7	18.3	20.4	42 3.34	0.12	13.92	23 42 17.38	
	Lacaille 9630	16	9.3	11.5	12.9	23.6	24.8	26.1	27.3	28.5	39.2	40.3	42.5	45 26.00	0.11	13.92	23 45 40.03	
	B. A. C. 8308, (1st *)	17	..	..	..	3.3	4.8	6.1	7.4	8.5	..	..	..	47 6.02	+ 0.06	13.92	23 47 20.00	
	B. A. C. 8308, (2d *)	18	..	..	..	19.6	21.1	23.2	40.2	42.9	44.2	45.7	47.3	47 35.52	— 28.92	13.92	23 47 20.52	
	Lacaille 9659	19	..	..	..	51.8	53.0	54.2	55.6	56.6	7.2	8.6	11.0	49 59.75	— 5.50	13.92	23 50 8.17	
	ω Piscium	20	52.1	54.0	55.2	4.9	5.9	7.0	8.3	9.3	18.7	20.1	22.0	52 7.05	+ 0.04	13.92	23 52 21.01	
	Lacaille 9695	21	..	..	..	7.3	8.6	9.9	11.3	12.4	23.2	24.8	26.9	54 15.55	— 5.61	13.92	23 54 23.86	
	Lacaille 9701	22	39.7	42.0	43.3	54.0	55.1	56.3	57.8	58.9	9.3	10.6	12.9	55 56.35	+ 0.11	13.91	23 56 10.37	
	Lacaille 9732	23	20.4	22.6	24.0	34.5	35.6	36.9	38.4	39.4	49.9	51.0	53.1	0 36.89	0.10	13.91	0 0 50.90	
	B. A. C. 10	24	54.9	57.1	58.4	9.5	10.6	12.0	13.3	14.4	25.4	26.8	29.0	2 11.95	0.12	13.91	0 2 25.98	
	* — 17° 57′	25	48.2	50.1	51.4	1.7	2.8	4.1	5.3	6.5	16.3	17.7	19.7	6 3.98	0.09	13.91	0 6 17.98	
	* — 17° 58′	26	27.1	28.5	29.9	31.2	33.7	..	36.8	39.3	40.4	41.7	43.0	6 5.16	0.35	13.91	0 6 19.42	
	Lacaille 26	27	44.3	45.9	47.4	48.8	51.9	..	3.9	6.5	8.0	9.5	11.0	9 27.72	0.43	13.91	0 9 42.06	
	B. A. C. 49	28	20.4	22.9	24.3	35.7	37.0	38.5	39.8	40.9	52.4	53.8	56.3	9 38.36	0.13	13.91	0 9 52.40	
	Lacaille 49	29	34.9	37.4	38.7	..	51.1	52.4	53.6	..	5.7	7.3	9.6	13 52.30	0.11	13.91	0 14 6.32	
	Lacaille 66	30	2.7	5.1	6.5	17.7	19.0	20.5	21.9	23.0	33.7	35.4	37.5	16 20.27	0.12	13.91	0 16 34.30	
	Lacaille 84	31	38.5	40.7	42.2	53.6	54.9	56.4	57.7	58.8	9.9	11.3	13.5	18 56.14	0.12	13.91	0 19 10.17	
	B. A. C. 103	32	39.9	42.3	43.8	55.3	56.5	58.1	59.6	0.8	12.1	13.7	16.0	20 58.01	0.13	13.91	0 21 12.05	
	12 Ceti	33	38.2	40.1	41.4	51.2	52.2	53.4	54.6	55.7	5.0	6.2	8.2	22 53.29	0.06	13.91	0 23 7.26	
	O. Arg. S. 388	†34	12.3	14.6	16.0	26.7	28.0	29.4	30.6	31.8	42.4	43.7	46.0	37 29.23	+ 0.11	13.91	0 37 43.25	
	Lacaille 210	35	..	..	..	0.6	2.2	4.4	21.8	24.7	26.0	27.4	28.9	40 17.00	— 29.82	13.91	0 40 1.09	
	Lacaille 223	36	..	..	..	16.5	17.7	19.0	20.3	21.5	..	..	..	42 19.00	+ 0.06	13.91	0 42 32.97	
	Lacaille 241	†37	2.6	4.8	6.0	16.8	18.0	19.2	20.6	21.7	32.3	33.6	35.8	46 19.22	0.11	13.91	0 46 33.24	
	Lacaille 256	38	49.9	52.1	53.4	4.5	5.7	7.1	8.5	9.6	20.4	21.8	24.0	49 7.00	0.12	13.91	0 49 21.03	
	α Sculptoris	39	33.0	35.4	36.8	47.9	49.1	50.5	51.8	53.0	4.1	5.5	7.6	51 50.43	0.12	13.91	0 52 4.46	
	Lacaille 276	40	23.6	26.2	27.6	39.2	40.4	41.9	43.4	44.6	56.2	57.6	59.9	54 41.87	+ 0.13	13.91	0 54 55.91	
	Polaris	†41	55.5	19.0	6.5	39.0	23.0	10.0	58.0	39.5	2.0	56.5	14.0	10 7.55	— 1.87	13.91	1 10 18.59	1
	η Piscium	†42	44.7	46.9	48.3	58.0	59.1	0.3	1.6	2.6	12.4	13.9	15.8	24 0.33	+ 0.03	13.90	1 24 14.26	
	Lalande 2942	†43	47.1	49.1	50.4	0.6	1.6	2.8	4.0	5.2	15.1	16.4	18.5	29 2.80	0.09	13.90	1 29 16.79	
	ν Piscium	†44	54.0	56.0	57.0	6.8	7.8	8.9	10.2	11.0	20.5	21.9	24.0	34 8.92	0.05	13.90	1 34 22.87	
	β Leonis	45	37.4	39.4	40.6	50.6	51.8	53.0	54.3	55.4	5.0	6.4	8.4	41 52.94	0.08	13.69	11 42 6.71	
	Moon II	46	14.5	16.5	17.7	27.7	28.7	29.9	31.1	32.2	41.9	43.2	45.1	48 29.86	0.05	13.69	11 48 43.60	
R.	Venus II	47	11.3	13.3	14.7	24.3	25.3	26.5	27.6	28.6	38.0	39.4	41.2	10 26.38	+ 0.05	13.59	12 10 40.02	
	Polaris, S. P.	†48	..	..	..	41.0	57.0	7.0	21.0	40.0	..	..	..	10 9.20	— 3.19	13.55	1 10 19.56	1
	α Virginis	49	32.4	34.3	35.6	45.4	46.4	47.6	48.9	50.0	59.5	0.7	2.7	17 47.59	+ 0.04	13.55	13 18 1.18	
	Mercury II	50	25.7	27.6	28.9	38.8	39.9	41.0	42.2	43.3	53.0	54.2	56.3	56 40.99	0.04	13.54	13 56 54.57	
	α Bootis	51	56.9	59.0	0.2	10.4	11.6	12.7	14.1	15.2	25.3	26.5	28.7	9 12.78	0.08	13.53	14 9 26.39	
7	Sun I	52	46.7	48.6	49.9	0.1	1.2	2.5	3.6	4.7	14.6	16.0	18.0	48 2.35	0.03	13.51	14 48 15.89	
	Sun II	53	1.9	3.8	5.0	15.4	16.4	17.6	18.8	19.9	29.8	31.1	33.1	50 17.53	0.03	13.51	14 50 31.07	
	α Cor. Borealis	54	24.1	26.4	27.4	38.5	39.8	41.1	42.4	43.6	54.3	55.7	57.9	28 41.02	+ 0.09	+13.49	15 28 54.60	—

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 6, 20.4	+ 13.94	— 0.007	+ 0.054
6-7. 16.2	+ 13.47	— 0.029	+ 0.054

4. Wonderfully blurred; a storm of wind blowing.
7. Very high wind.
9. Blurred.
12. Blurred.
34. Preceded by a smaller star to southward.
37. Duplex.
41-42-43. Blurred.
44. Blurred and unsteady.
48. Unsteady.

November 7, 1h. 30m. Image east $\overset{r.}{0.02}$. Clamp west.

November 6-7, 11h. to 19h. n. = + $\overset{s.}{0.072}$.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Nov. 7	α Herculis . . .	1	57. 0	59. 0	0. 2	10. 3	11. 3	12. 6	13. 8	14. 8	24. 5	25. 8	27. 9	8 12. 47	+ 0. 08	+13. 44	17 8 25. 99	— 10. 08
	δ Ursæ Minoris . .	2	. .	. .	. .	. .	. .	. .	4. 0	44. 0	4. 5	24. 5	48. 5	25 1. 10	— 9 18. 53	13. 41	18 15 55. 98	+ 94. 54
	α Lyræ	3	46. 5	49. 0	50. 4	2. 8	4. 2	5. 7	7. 3	8. 4	20. 7	22. 2	24. 8	32 5. 64	+ 0. 13	13. 40	18 32 19. 17	— 7. 34
R.	β Lyræ	4	31. 5	33. 7	35. 3	46. 9	48. 0	49. 4	51. 0	52. 2	3. 5	4. 9	7. 3	44 49. 43	0. 11	13. 39	18 45 2. 93	8. 25
9	α Bootis	†5	58. 5	0. 8	2. 0	12. 3	13. 3	14. 6	16. 0	16. 9	27. 0	28. 5	30. 4	9 14. 57	+ 0. 12	11. 79	14 9 26. 48	9. 88
10	Sun I	†6	52. 5	54. 5	55. 7	6. 0	7. 1	8. 3	9. 5	10. 5	20. 5	22. 0	23. 9	0 8. 23	0. 00	11. 78	15 0 20. 01	. .
	Sun II	7	8. 4	10. 4	11. 6	21. 8	22. 9	24. 2	25. 5	26. 6	36. 4	37. 8	39. 8	2 24. 13	0. 00	11. 78	15 2 35. 91	. .
	Polaris, S. P. . .	†8	. .	. .	. .	46. 0	0. 0	12. 0	25. 0	45. 0	. .	. .	. .	10 13. 60	— 7. 28	11. 39	1 10 17. 71	135. 36
	α Virginis	9	34. 6	36. 7	37. 9	47. 6	48. 7	49. 9	51. 0	52. 1	1. 8	3. 0	4. 9	17 49. 84	+ 0. 02	11. 39	13 18 1. 25	11. 95
	α Bootis	10	59. 1	1. 0	2. 3	12. 7	13. 7	15. 1	16. 4	17. 5	27. 5	28. 7	30. 9	9 14. 99	0. 12	11. 37	14 9 26. 48	9. 89
	Mercury II . . .	†11	21. 4	23. 4	24. 7	34. 4	35. 6	36. 8	38. 0	39. 0	48. 8	50. 1	52. 2	20 36. 76	0. 02	11. 37	14 20 48. 15	0. 18
11	Sun I	12	56. 2	58. 1	59. 5	9. 6	10. 7	12. 0	13. 3	14. 2	24. 0	25. 3	27. 5	4 11. 85	0. 00	11. 36	15 4 23. 21	. .
	Sun II	13	12. 2	14. 2	15. 5	25. 7	26. 8	28. 2	29. 3	30. 3	40. 3	41. 5	43. 8	6 27. 98	0. 00	11. 36	15 6 39. 34	. .
	Venus I	14	18. 3	20. 3	21. 6	31. 3	32. 3	33. 5	34. 7	35. 7	45. 2	46. 5	48. 3	23 33. 43	+ 0. 05	11. 16	12 23 44. 64	1. 20
	Polaris, S. P. . .	†15	. .	. .	. .	46. 0	1. 0	14. 0	26. 0	45. 0	. .	. .	. .	10 14. 40	— 8. 08	11. 15	1 10 17. 47	135. 14
	α Bootis	16	59. 3	1. 4	2. 8	13. 0	14. 1	15. 3	16. 5	17. 6	27. 9	29. 2	31. 3	9 15. 31	+ 0. 13	11. 13	14 9 26. 57	9. 91
	Mercury II . . .	†17	26. 7	28. 7	29. 8	39. 7	40. 7	42. 3	43. 4	44. 6	54. 3	55. 6	57. 6	26 42. 13	+ 0. 01	11. 13	14 26 53. 27	0. 18
12	Sun I	18	0. 0	2. 2	3. 5	13. 5	14. 7	15. 9	17. 1	18. 2	28. 3	29. 7	31. 7	8 15. 89	— 0. 01	11. 12	15 8 27. 00	. .
	Sun II	19	16. 4	18. 5	20. 0	30. 1	31. 2	32. 5	33. 8	34. 8	44. 8	46. 1	48. 0	10 32. 38	— 0. 01	11. 12	15 10 43. 49	. .
	α Ophiuchi . . .	20	9. 9	12. 0	13. 2	22. 9	24. 0	25. 4	26. 6	27. 6	37. 0	38. 5	40. 4	28 25. 23	+ 0. 10	11. 09	17 28 36. 42	10. 31
	12 Ceti	21	41. 0	43. 0	44. 2	53. 9	55. 0	56. 2	57. 4	58. 4	8. 0	9. 1	11. 1	22 56. 12	0. 05	11. 01	0 23 7. 18	13. 52
	B. A. C. 135 . .	22	29. 8	32. 3	33. 6	45. 0	46. 2	47. 6	48. 9	50. 1	1. 0	2. 5	4. 7	26 47. 43	0. 03	11. 01	0 26 58. 47	13. 19
	B. A. C. 203 . .	23	34. 6	36. 6	38. 0	48. 4	49. 5	50. 7	52. 1	53. 2	3. 5	4. 8	7. 0	37 50. 76	0. 04	11. 01	0 38 1. 81	13. 22
	Lacaille 218 . .	24	51. 2	53. 4	54. 7	5. 0	6. 2	7. 4	8. 8	9. 8	20. 0	21. 6	23. 6	41 7. 43	0. 04	11. 01	0 41 18. 48	13. 21
	Lacaille 257 . .	25	. .	. .	. .	59. 0	0. 1	1. 3	2. 8	3. 8	. .	. .	. .	50 1. 40	0. 04	11. 01	0 50 12. 45	13. 07
	70 Piscium	26	38. 0	39. 9	41. 1	50. 9	52. 0	53. 1	54. 3	55. 4	5. 0	6. 2	8. 1	54 53. 09	0. 06	11. 01	0 55 4. 16	13. 94
	ε Piscium	27	28. 5	30. 6	31. 7	41. 4	42. 6	43. 7	45. 0	45. 9	55. 5	56. 7	58. 7	55 43. 66	0. 06	11. 01	0 55 54. 73	13. 93
	Polaris	28	. .	. .	. .	32. 0	14. 0	4. 0	55. 0	36. 0	. .	. .	. .	10 4. 20	2. 17	11. 00	1 10 17. 37	135. 02
	θ Ceti	29	48. 9	50. 9	52. 1	1. 7	3. 0	4. 1	5. 3	6. 3	15. 8	16. 9	19. 0	17 4. 00	0. 05	11. 00	1 17 15. 05	13. 46
	η Piscium	30	47. 7	49. 6	51. 0	0. 9	2. 1	3. 3	4. 6	5. 5	15. 3	16. 7	18. 5	24 3. 20	+ 0. 07	11. 00	1 24 14. 27	14. 46
	Polaris, S. P. . .	†31	21. 0	58. 0	9. 0	38. 0	56. 0	9. 0	19. 0	37. 0	13. 0	21. 0	3. 0	10 9. 49	- 6. 77	14. 43	1 10 17. 15	134. 88
	α Bootis	32	56. 0	58. 2	59. 4	9. 7	10. 8	12. 0	13. 2	14. 4	24. 3	25. 7	27. 9	9 11. 97	+ 0. 10	14. 43	14 9 26. 50	9. 92
	Mercury II . . .	33	30. 4	32. 4	33. 7	43. 5	44. 7	46. 0	47. 3	48. 3	58. 0	59. 3	1. 3	32 45. 90	0. 03	14. 43	14 33 0. 36	0. 18
13	Sun I	34	1. 5	3. 6	4. 8	14. 9	16. 0	17. 4	18. 8	19. 8	29. 7	31. 0	32. 9	12 17. 31	0. 02	14. 43	15 12 31. 76	. .
	Sun II	35	18. 2	20. 2	21. 4	31. 7	32. 8	33. 9	35. 0	36. 1	46. 5	48. 0	49. 7	14 33. 95	0. 02	14. 43	15 14 48. 40	. .
	α Herculis . . .	36	56. 0	58. 0	59. 3	9. 2	10. 3	11. 5	12. 7	13. 7	23. 5	24. 8	26. 9	8 11. 45	+ 0. 09	14. 43	17 8 25. 97	10. 05
	α Ophiuchi . . .	37	. .	. .	. .	19. 9	20. 9	22. 1	23. 3	24. 4	34. 0	35. 2	37. 4	28 27. 15	— 5. 03	14. 43	17 28 36. 55	10. 31
	α Lyræ	38	45. 2	47. 8	49. 4	1. 7	3. 0	4. 6	6. 2	7. 4	19. 4	21. 0	23. 6	32 4. 48	+ 0. 16	14. 43	18 32 4. 48	7. 23
Y.	* — 24° 45′ . .	39	4. 3	6. 5	7. 8	18. 5	19. 6	20. 8	22. 2	23. 3	33. 8	35. 2	37. 4	25 20. 85	0. 03	14. 52	21 25 35. 40	14. 12
	ε Pegasi	40	1. 0	3. 0	4. 2	14. 0	15. 1	16. 3	17. 5	18. 6	28. 1	29. 3	31. 4	37 16. 23	+ 0. 06	14. 53	21 37 30. 82	12. 25
	Lacaille 8923 . .	41	. .	. .	. .	4. 7	5. 9	7. 2	8. 6	9. 7	20. 2	21. 7	24. 0	40 12. 75	— 5. 54	14. 53	21 40 21. 74	14. 19
	Lacaille 8934 . .	42	. .	. .	. .	2. 0	3. 3	5. 6	22. 4	25. 1	26. 4	27. 8	29. 4	42 17. 75	— 29. 06	14. 53	21 42 3. 22	14. 28
	O. Arg. S. 21710 .	43	58. 9	1. 0	2. 2	12. 5	13. 5	14. 9	16. 0	17. 1	27. 3	28. 6	30. 6	45 14. 78	+ 0. 04	14. 53	21 45 29. 35	13. 78
	B. A. C. 7632 . .	44	37. 7	40. 3	41. 7	54. 0	55. 4	57. 0	58. 4	59. 6	11. 7	13. 3	15. 8	47 56. 81	0. 02	14. 53	21 48 11. 36	14. 93
	O. Arg. S. 21772 .	45	37. 4	38. 9	40. 3	41. 7	44. 3	. .	50. 4	53. 1	54. 4	55. 7	57. 2	51 17. 34	0. 31	14. 53	21 51 32. 18	14. 03
	Lacaille 8982 . .	46	6. 5	8. 8	10. 2	20. 7	21. 9	23. 2	24. 5	25. 6	36. 0	37. 4	39. 5	51 23. 12	0. 03	14. 53	21 51 37. 68	14. 03
	Lacaille 9004 . .	47	53. 0	54. 4	56. 7	8. 0	9. 3	10. 6	12. 0	13. 1	24. 2	25. 7	27. 9	55 10. 45	0. 03	14. 53	21 55 25. 01	14. 37
	13 Piscis Australis .	48	1. 3	3. 8	5. 0	16. 4	17. 5	18. 8	20. 2	21. 4	32. 5	33. 9	36. 2	56 18. 82	+ 0. 03	14. 53	21 56 33. 38	14. 36
	B. A. C. 7694 . .	49	. .	. .	. .	23. 7	24. 7	26. 0	27. 4	28. 5	38. 8	40. 1	42. 2	59 31. 42	— 5. 38	14. 54	21 59 40. 58	13. 92
	B. A. C. 7715 . .	50	43. 2	45. 5	47. 0	58. 0	59. 1	0. 5	1. 8	2. 9	13. 8	15. 3	17. 5	2 0. 42	+ 0. 03	14. 54	22 2 14. 99	14. 24
	λ Piscis Australis .	51	4. 6	7. 0	8. 4	19. 4	20. 5	21. 8	23. 3	24. 4	35. 2	36. 4	38. 8	6 21. 80	0. 03	14. 54	22 6 36. 37	14. 18
	θ Aquarii	52	10. 1	12. 2	13. 4	23. 2	24. 3	25. 5	26. 6	27. 6	37. 3	38. 5	40. 4	9 25. 37	+ 0. 05	—14. 54	22 9 39. 96	— 13. 28

5. Unsteady.
6. Limb very tremulous.
8. Unsteady.
11. Faint and unsteady.
15. Unsteady and obscured by clouds. C_3 recorded 10*s*. less.
17. Second hypothetical.
31. Commenced using the Howard and Davis clock.

November 12, 1h. 35m. Image east $\overset{r.}{0}.16$. Clamp west.

November 9, . . n. = + $\overset{s.}{0}.173$.
11–12, 12h. to 18h. 0. 193.
12, 0h. to 2h. 0. 047.
12–13, 13h. to 19h. + 0. 113.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 9, 14. 2	+ 11. 79	— 0. 017	+ 0. 054
10, 13. 7	11. 38	0. 015	. .
12, 22. 0	11. 04	— 0. 012	. .
13, 16. 8	+ 14. 43	+ 0. 001	+ 0. 054

Date.	Object.	Number.	Times of transit over wires I–XI	Mean.	Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
1862.			s.	m. s.	m. s.	s.	h. m. s.	s.
Nov. 13	Lacaille [illegible]	1	[illegible]	[illegible]	− 0.03	−14.54	22 11 38.91	− 14.18
	Lacaille [illegible]	2	[illegible]	[illegible]	0.03	14.54	22 15 35.23	14.04
	Lacaille [illegible]	3	[illegible]	[illegible]	0.03	14.54	22 18 32.70	14.13
Y.	Lacaille [illegible]	4	[illegible]	[illegible]	− 0.03	14.54	22 21 48.04	14.14
	ι Piscis Australis	5	[illegible]	[illegible]	− 5.91	14.54	22 23 46.49	14.31
	[illegible]	6	[illegible]	[illegible]	− 20.51	14.54	22 23 46.89	14.31
	Lacaille [illegible]	7	[illegible]	[illegible]	− 0.02	14.54	22 26 23.56	14.28
	Lacaille [illegible]	8	[illegible]	[illegible]	0.02	14.55	22 30 19.62	14.32
	B. A. C. [illegible]	9	[illegible]	[illegible]	0.03	14.55	22 32 47.22	14.16
	[illegible] Gruis	10	[illegible]	[illegible]	0.02	14.55	22 35 36.62	14.70
	Lacaille 9242	11	[illegible]	[illegible]	0.02	14.55	22 39 17.56	14.66
	21 Piscis Australis	12	[illegible]	[illegible]	0.03	14.55	22 43 51.30	14.03
	Lacaille [illegible]	13	[illegible]	[illegible]	0.03	14.55	22 46 55.69	13.85
	α Piscis Australis	14	[illegible]	[illegible]	0.03	14.55	22 50 8.51	14.09
	Lacaille [illegible]	15	[illegible]	[illegible]	0.03	14.55	22 53 2.34	13.84
	α Pegasi	16	[illegible]	[illegible]	6.07	14.55	22 58 0.26	12.91
	Lacaille 9444	17	[illegible]	[illegible]	0.02	14.56	23 12 22.05	13.93
	Lacaille 9453	18	[illegible]	[illegible]	− 0.03	14.56	23 15 38.42	13.66
	O. Arg. S. [illegible]	19	[illegible]	[illegible]	− 28.11	14.56	23 15 53.54	13.66
	Lacaille [illegible]	20	[illegible]	[illegible]	− 22.85	14.56	23 18 11.89	13.78
	B. A. C. 8172	21	[illegible]	[illegible]	− 0.02	14.56	23 20 43.02	13.89
	Lacaille [illegible]	22	[illegible]	[illegible]	0.02	14.56	23 23 40.85	13.85
	Lacaille 9516	23	[illegible]	[illegible]	0.03	14.56	23 26 14.03	13.74
	Lacaille 9539	24	[illegible]	[illegible]	− 0.03	14.57	23 30 44.65	13.60
	Lacaille 9550	25	[illegible]	[illegible]	− 0.02	14.57	23 33 19.11	13.59
	Lacaille 9579	26	[illegible]	[illegible]	− 28.79	14.57	23 37 25.04	13.57
	Lacaille 9605	27	45.5 47.8 49.2 [illegible]	[illegible]	− 0.07	14.57	23 42 17.22	13.56
	Lacaille 9652	28	[illegible]	[illegible]	− 35.92	14.57	23 49 7.67	13.47
	ω Piscium	29	51.1 53.2 54.4 4.1 [illegible]	[illegible]	− 0.06	14.57	23 52 20.89	13.51
	B. A. C. 43	30	44.6 46.8 48.4 [illegible]	[illegible]	− 0.07	14.58	0 9 16.96	13.33
	O. Arg. S. 122	31	[illegible]	[illegible]	− 5.19	14.58	0 13 10.14	13.38
	Neptune	32	58.5 0.6 1.7 11.5 12.7 [illegible]	[illegible]	− 0.06	14.58	0 15 28.21	. .
	Lacaille 83	33	. . . . . . 40.7 41.24 [illegible]	[illegible]	− 5.60	14.58	0 18 57.84	13.27
	Lacaille 100	34	32.0 34.2 35.4 46.3 47.5 [illegible]	[illegible]	− 0.07	14.58	0 22 3.25	13.27
	Lacaille 118	35	3.5 5.8 7.0 17.9 19.02 [illegible]	[illegible]	0.07	14.58	0 25 34.86	13.25
	Lacaille 138	36	46.3 48.6 49.8 0.8 2.0 [illegible]	[illegible]	− 0.07	14.59	0 28 17.83	13.21
	B. A. C. 160	37	. . . . . . 5.5 [illegible]	[illegible]	− 5.45	14.59	0 30 22.58	13.22
	Lacaille 167	38	11.7 14.0 15.2 26.0 27.1 [illegible]	[illegible]	− 0.07	14.59	0 33 42.94	13.21
	B. A. C. 203	39	30.9 33.0 34.2 44.9 46.0 47.2 [illegible]	[illegible]	0.07	14.59	0 38 1.81	13.21
	Polaris	†40	18.0 13.6 4.5 54.0 42.5	[illegible]	22 42.72	14.59	1 10 16.92	134.74
	θ Ceti	41	48.8 51.0 52.2 2.0 3.1 4.2 [illegible]	[illegible]	0.06	10.82	1 17 15.03	13.46
	Lalande 2612	42	3.4 5.3 6.5 [illegible]	[illegible]	0.09	10.82	1 19 29.26	13.76
	B. A. C. 433	43	. . . . . . 18.2 19.3 [illegible]	[illegible]	0.00	10.82	1 19 31.24	13.76
	η Piscium	44	47.8 50.0 51.0 1.1 2.2 3.3 [illegible]	[illegible]	0.05	10.82	1 24 14.21	14.46
	ν Piscium	45	57.0 59.0 0.2 9.8 10.9 12.2 [illegible]	[illegible]	0.05	10.82	1 34 22.93	14.05
	Venus II	46	59.9 2.0 3.1 12.8 14.0 [illegible]	[illegible]	− 0.05	10.82	11 29 25.89	1.16
	Polaris, S. P.	†47 †48	53.0 59.5 7.5 17.5 [illegible] 20.5 59.5 11.0 41.0 [illegible]	[illegible]	− 4.91	10.82	1 10 16.86	134.58
	α Bootis	49	59.6 1.8 3.1 13.3 14.5 [illegible]	9 15.61	− 0.08	10.80	14 9 26.49	9.93
14	Sun I	†50	10.6 12.9 14.2 24.2 25.2 [illegible]	16 26.46	0.04	10.79	15 16 37.29	. .
	Sun II	†51	27.3 29.5 30.9 41.2 42.2 43.5 [illegible]	18 43.40	− 0.04	10.79	15 18 54.23	. .
	α Herculis	†52	59.6 1.6 2.9 . . . [illegible]	8 31.39	− 16.19	10.79	17 8 25.99	10.05
15	Moon I	53	37.8 39.9 41.3 51.6 52.8 54.2 [illegible] 10.3	35 54.08	+ 0.06	10.50	19 36 4.64	. .
R.	γ Aquilæ	54	21.5 23.6 24.8 34.7 35.7 36.9 [illegible] 52.0	39 36.81	+ 0.08	+10.50	19 39 47.39	− 11.17

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 13 22.7	− 14.55	+ 0.020	+ 0.054
14 7.1	10.81	− 0.002	0.054
15 1.7	− 10.51	+ 0.002	+ 0.070

25. Through clouds.

40. Steady. After set A the clock stopped; the subsequent observations were made with the Parkinson and Frodsham clock.

47–48. Steady; reduced from mean of 11 wires.

50–51. Both limbs steady.

52. Faint.

November 13. Stars very steady.

		s.
November	13, 21h. to 0h. n.	+ 0.060.
	13, 0h. to 2h.	− 0.014.
	13–14, 13h. to 18h.	+ 0.067.
	15. . . .	+ 0.043.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1863. Nov. 15	α Aquilæ	1	42.8	44.9	46.0	55.8	56.9	58.0	59.3	0.3	9.9	11.2	13.0	43 58.01	+ 0.08	+10.50	19 44 8.59	− 11.49
R.	α Bootis	2	59.9	2.0	3.4	13.6	14.7	16.0	17.2	18.3	28.4	29.9	31.8	9 15.93	+ 0.09	10.53	14 9 26.55	9.96
16	Polaris, S. P.	3	. .	. .	. .	38.0	55.0	7.0	21.0	38.0	. .	. .	. .	10 7.80	− 2.65	10.35	1 10 15.50	133.23
	α Bootis	4	. .	. .	. .	13.8	14.9	16.2	17.4	18.4	. .	. .	. .	9 16.14	+ 0.04	10.37	14 9 26.55	9.98
	Mercury II	5	22.0	24.0	25.2	35.6	36.6	37.8	39.0	40.1	50.0	51.4	53.3	57 37.73	0.09	10.38	14 57 48.20	− 0.18
17	Sun II	6	50.7	52.4	53.7	4.0	5.2	6.5	7.7	8.7	18.8	20.2	22.2	31 6.37	+ 0.06	10.39	15 31 16.82	+ 68.79
	α Ophiuchi	7	10.6	12.7	13.9	38.0	39.3	41.4	56.6	59.0	0.2	1.4	2.8	28 41.45	− 15.34	10.43	17 28 36.54	− 10.29
	α Lyræ	8	49.3	51.7	53.2	5.8	7.0	8.6	10.1	11.5	23.4	25.2	27.5	32 8.48	+ 0.12	10.45	18 32 19.05	7.17
Y.	α Aquilæ	9	42.7	45.0	46.2	55.9	57.0	58.2	59.4	0.5	9.9	11.3	13.3	43 58.13	0.08	. .	. . . .	11.47
R.	ξ Aquarii	10	5.3	7.4	8.6	18.3	19.4	20.5	21.7	22.7	32.4	33.5	35.6	30 20.49	0.06	10.51	21 30 31.06	13.34
	Moon I	11	21.1	23.0	24.3	34.3	35.4	36.7	38.0	39.0	48.9	50.1	52.1	32 36.63	0.06	10.51	21 32 47.20	. .
	B. A. C. 7562	12	52.9	54.1	55.7	56.9	59.3	. .	0.2	2.5	3.6	4.8	6.3	37 29.63	0.31	10.51	21 37 40.45	13.32
	c^1 Capricorni	13	19.9	21.7	23.0	32.8	33.9	35.1	36.3	37.3	47.1	48.2	50.2	37 35.05	+ 0.06	10.51	21 37 45.62	13.32
Y.	Polaris, S. P.	14	. .	. .	. .	. .	. .	. .	56.0	2.5	10.0	19.0	43.0	33 2.10	− 22 57.52	10.35	1 10 14.93	132.18
18	α Ophiuchi	15	10.7	12.8	14.0	24.0	25.0	26.1	27.4	28.4	38.2	39.5	41.4	28 26.14	+ 0.11	10.29	17 28 36.54	10.29
R.	α Lyræ	16	49.3	51.9	53.3	5.6	7.0	8.6	10.1	11.4	23.6	25.2	27.8	32 8.53	0.21	10.28	18 32 19.02	7.15
	Lacaille 8982	17	10.8	13.1	14.3	24.9	26.0	27.4	28.6	29.7	40.2	41.6	43.7	51 27.30	0.03	10.24	21 51 37.57	13.98
	Lacaille 9005	18	56.6	58.8	0.1	11.2	12.3	13.5	14.8	16.0	26.8	28.1	30.4	55 13.51	0.03	10.24	21 55 23.78	14.12
	α Aquarii	19	23.0	25.1	26.1	35.7	36.8	38.2	39.3	40.3	49.7	51.1	53.0	58 38.03	0.07	10.24	21 58 48.34	12.83
	Lacaille 9038	20	25.6	27.8	29.1	39.7	40.9	42.2	43.5	44.6	54.9	56.4	58.5	1 42.11	0.03	10.24	22 1 52.38	13.91
	Lacaille 9065	21	8.8	11.2	12.5	23.6	24.7	26.0	27.4	28.5	39.4	40.8	42.9	6 25.98	0.03	10.24	22 6 36.25	14.10
	θ Aquarii	22	14.3	16.3	17.5	27.3	28.3	29.6	30.8	31.8	41.4	42.6	44.7	9 29.51	+ 0.06	10.24	22 9 39.81	13.21
	Sun 9097	23	. .	. .	. .	25.9	27.3	28.5	29.8	31.1	41.9	43.4	45.6	11 34.19	− 5.66	10.23	22 11 38.76	14.10
	Lacaille 9113	24	8.0	10.4	11.7	22.5	23.6	24.9	26.3	27.4	38.0	39.4	41.6	15 24.89	+ 0.03	10.23	22 15 35.15	13.96
	Lacaille 9127	25	. .	. .	. .	12.9	14.5	16.5	33.4	36.0	37.3	38.8	40.3	17 28.71	− 28.93	10.23	22 17 10.01	14.00
	Lacaille 9144	26	20.4	21.8	24.1	35.3	36.4	37.7	39.0	40.3	51.1	52.6	54.9	21 37.60	+ 0.02	10.23	22 21 47.85	14.06
	β Piscis Australis	27	. .	. .	. .	50.1	51.6	54.0	11.7	14.5	16.0	17.4	19.1	24 6.68	− 30.60	10.23	22 23 46.31	14.23
	Moon	28	15.1	17.3	18.4	28.3	29.4	30.5	31.8	32.8	42.5	43.9	45.8	27 30.53	+ 0.06	10.23	22 27 40.82	. .
	η Aquarii	29	. .	. .	. .	24.0	25.3	27.3	42.2	44.5	45.8	46.9	48.4	28 38.05	− 25.61	10.23	22 28 22.67	12.99
	B. A. C. 7891	30	42.6	44.8	46.4	. .	. .	. .	. .	. . .	13.2	14.7	16.9	31 59.77	+ 0.07	10.23	22 32 10.07	13.98
	O. Arg. S. 22316	†31	59.7	0.8	2.2	3.5	4.6	. .	36.2	38.9	40.2	41.5	43.0	32 21.06	− 18.98	10.23	22 32 12.31	13.98
	20 Piscis Australis	32	38.0	40.3	41.6	52.5	53.6	54.8	56.2	57.3	7.9	9.2	11.4	37 54.80	+ 0.03	10.23	22 38 5.06	13.83
	Lacaille 9253	33	. .	. .	. .	8.3	9.6	11.1	12.6	13.8	26.1	27.7	30.1	40 17.41	− 6.36	10.23	22 40 21.28	14.34
	21 Piscis Australis	34	23.5	25.8	27.1	38.4	39.5	40.9	42.3	43.5	54.5	56.0	58.2	43 40.88	+ 0.02	10.23	22 43 51.13	13.95
	1 Piscium	35	37.4	39.4	40.6	50.3	51.3	52.4	53.8	54.7	4.2	5.4	7.3	47 52.44	0.07	10.23	22 48 2.74	13.06
	B. A. C. 7998	36	31.9	34.4	35.9	47.8	49.1	50.6	52.1	53.3	5.1	6.6	9.0	50 50.53	0.01	10.23	22 51 0.77	14.13
	Lacaille 9343	37	31.2	33.9	35.2	47.4	48.8	50.1	51.8	53.0	4.8	6.4	9.0	54 50.15	0.01	10.22	22 55 0.38	14.12
	Lacaille 9361	38	30.4	32.6	33.9	44.6	45.7	47.0	48.4	49.4	0.0	1.3	3.4	57 46.97	0.03	10.22	22 57 57.22	13.70
	* — 20° 14	39	41.1	43.3	44.6	54.9	56.0	57.2	. .	. .	9.7	11.0	13.0	2 56.76	0.46	10.22	23 3 7.44	13.55
	O. Arg. S. 22666	40	47.3	49.5	50.9	0.9	2.0	3.2	4.5	5.5	15.7	16.9	18.8	5 3.20	+ 0.04	10.22	23 5 13.46	13.50
	O. Arg. S. 22670	41	. .	. .	. .	26.6	28.0	30.0	45.8	48.2	49.5	50.8	52.2	5 41.39	− 26.97	10.22	23 5 24.64	13.50
	O. Arg. S. 22691	42	43.6	46.0	47.1	57.3	58.5	59.6	0.8	2.0	11.9	13.3	15.2	6 59.57	+ 0.04	10.22	23 7 9.83	13.50
	Weisse 227	43	27.5	29.5	30.7	40.4	41.4	42.6	43.7	44.8	54.2	55.5	57.5	11 42.53	0.07	10.22	23 11 52.82	13.16
	δ Sculptoris	44	23.7	26.2	27.5	38.5	39.6	41.0	42.3	43.5	54.4	55.8	57.9	41 40.95	0.02	10.21	23 41 51.18	13.53
	* — 23° 49′	45	12.9	15.2	16.5	27.2	28.4	29.6	31.0	32.1	42.7	44.1	46.2	45 29.63	0.03	10.21	23 45 39.87	13.43
	O. Arg. S. 23120	46	12.3	14.5	15.7	26.4	27.5	28.8	30.1	31.2	41.5	42.9	45.0	47 28.72	0.03	10.21	23 47 38.96	13.44
	O. Arg. S. 23126	47	21.5	23.7	25.0	35.7	36.7	37.9	39.2	40.3	50.7	52.0	54.0	48 37.88	0.03	10.21	23 48 48.12	13.44
	B. A. C. 8332	48	1.4	3.8	5.1	16.4	17.6	19.0	20.3	21.5	32.5	33.9	36.2	52 18.88	0.02	10.21	23 52 29.11	13.60
	Lacaille 9695	49	56.3	58.5	0.0	11.0	12.3	13.6	14.9	16.1	27.1	28.3	30.6	54 13.52	0.02	10.21	23 54 23.75	13.63
	Weisse 1183	50	41.2	43.3	44.5	54.2	55.2	56.4	57.5	58.6	8.1	9.3	11.3	57 56.33	0.07	10.21	23 58 6.61	13.43
	Weisse 1209	51	56.7	58.8	59.9	9.5	10.7	11.8	13.0	14.0	23.5	24.8	26.7	59 11.76	0.07	10.21	23 59 22.04	13.43
	O. Arg. S. 117	52	9.8	11.9	. .	23.2	24.4	25.7	26.9	28.0	. .	39.2	41.3	12 25.60	+ 0 06	10.21	0 12 35.87	13.33
	O. Arg. S. 122	53	. .	. .	. .	57.5	58.6	59.9	1.1	2.1	12.1	13.3	15.5	13 5.01	− 5.20	10.21	0 13 10.02	− 13.33
	Neptune	54	45.7	47.8	49.0	58.6	59.7	0.9	2.0	3.0	12.6	13.8	15.7	15 0.80	+ 0.07	+10.21	0 15 11.08	. .

31. Close; double companion of 9th magnitude.

		r.	
November 18, 2h. 30m.	Image east	0.22.	Clamp west.
	Image west	0.07.	Clamp east.

		s.
November 16–17, 13h. to 19h.	n. =	+ 0.043.
17, 19h. to 22h.		0.043.
17–18, 13h. to 19h.		0.152.
18, 21h. to 0h.		0.100.
0h. to 3h.		+ 0.046.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 17, 17.9	+ 10.44	+ 0.019	+ 0.070
18, 22.5	+ 10.23	− 0.013	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Nov. 18	Lacaille 78 . . .	1	48.9	51.2	52.6	4.0	5.2	6.6	8.0	9.2	20.2	21.6	24.0	18 6.50	+ 0.05	+10.21	0 18 16.76	— 13.19
	Lacaille 100 . .	2	36.4	38.7	39.9	50.6	51.8	53.0	54.3	55.4	6.0	7.3	9.6	21 53.00	0.06	10.21	0 22 3.27	13.22
	Lacaille 122 . .	3	24.5	26.6	28.0	38.9	40.0	41.3	42.6	43.7	54.5	55.9	58.1	26 41.28	0.06	10.20	0 26 51.54	13.17
R.	Lacaille 138 . .	4	50.7	53.0	54.2	5.0	6.2	7.6	8.9	10.1	20.6	22.1	24.3	28 7.61	0.06	10.20	0 28 17.87	13.16
	β Ceti	5	20.8	22.9	24.2	34.3	35.5	36.8	38.0	39.0	48.8	50.4	52.5	36 36.68	0.06	10.20	0 36 46.94	13.30
	Polaris . . .	†6	16.0	13.0	5.0	56.0	32.0	. .	12.0	47.0	38.5	24.0	22.0	9 59.86	4.71	10.20	1 10 14.77	132.39
		†7	50.0	12.0	3.0	29.0	13.5	1.5	51.0	32.0	57.5	45.0	4.0					
	O. Arg. S. 1066 .	8	18.8	21.1	22.3	. .	33.5	34.8	36.0	. .	47.1	48.4	50.5	40 34.72	+ 0.07	10.19	1 40 44.98	13.04
	Weisse 773 . . .	9	. .	. .	. .	32.2	33.3	34.5	35.6	36.6	46.2	47.3	49.4	43 39.39	— 4.92	10.19	1 43 44.66	13.74
	β Arietis	10	43.4	45.6	46.9	57.2	58.3	59.6	0.8	1.8	11.9	13.4	15.4	46 59.48	+ 0.09	10.19	1 47 9.76	15.00
	Lacaille 570 . .	11	18.4	20.7	22.1	32.8	34.0	35.2	36.6	37.7	48.4	49.7	51.8	50 35.22	0.06	10.19	1 50 45.47	12.60
	Lacaille 586, (1st *)	12	. .	. .	. .	28.1	29.3	30.5	31.8	33.0	. .	. .	. .	52 30.54	0.01	10.19	1 52 40.74	12.73
	Lacaille 586, (2d *)	13	14.3	16.7	17.9	. .	. .	. .	. .	. .	43.6	45.0	47.2	52 30 78	0.10	10.19	1 52 41.07	12.73
	O. Arg. S. 1256 .	14	57.9	0.2	1.4	12.5	13.6	14.9	16.3	17.4	28.0	29.5	31.7	56 14.85	+ 0.06	10.19	1 56 25.10	12.50
	B. A. C. 643 . .	15	. .	. .	. .	12.4	13.6	14.9	16.3	17.5	28.5	30.0	32.2	58 20.68	— 5.70	10.18	1 58 25.16	12.34
	Lacaille 638 . .	16	34.2	36.5	37.8	48.8	50.1	51.4	52.8	53.9	4.7	6.0	8.2	1 51.31	+ 0.06	10.18	2 2 1.55	12.42
	ξ^1 Ceti	17	24.0	26.0	27.2	36.9	38.0	39.2	40.4	41.4	51.0	52.2	54.1	5 39.13	+ 0.08	10.18	2 5 49.39	14.39
19	Venus II . . .	18	25.0	27.1	28.4	37.9	38.9	40.1	41.4	42.4	52.1	53.3	55.3	47 40.17	— 0.12	10.20	12 47 50.25	1.07
	Polaris, S. P. . .	19	39.0	59.5	10.5	23.0	39.0	9.0	20.0	58.0	. .	. .	. .	6 47.25	+ 3 16.43	10.20	1 10 13.88	131.62
	α Virginis	20	36.1	38.0	39.4	49.0	50.1	51.3	52.5	53.6	3.4	4.6	6.6	17 51.33	— 0.14	10.20	13 18 1.39	12.14
	α Bootis	21	0.6	2.7	4.0	14.2	15.2	16.5	17.7	18.8	29.0	30.3	32.5	9 16.50	0.03	10.20	14 9 26.67	10.03
20	Sun I	22	2.4	4.4	5.8	15.7	16.8	18.1	19.4	20.5	30.7	32.1	34.1	41 18.18	0.19	10.20	15 41 28.19	. .
	Sun II	23	20.7	22.6	23.9	34.2	35.1	36.4	37.7	38.9	49.1	50.2	52.6	43 36.49	0.19	10.20	15 43 46.50	. .
	α Ophiuchi	24	10.9	13.0	14.3	23.9	25.1	26.3	27.5	28.6	38.4	39.7	41.8	28 26.32	0.06	10.19	17 28 36.45	10.28
	α Aquilæ	25	43.4	45.4	46.5	56.2	57.2	58.5	59.7	0.8	10.3	11.6	13.6	43 58.47	0.07	10.18	19 44 8.58	11.43
	γ Piscium	†26	. .	. .	. .	. .	. .	. .	27.9	30.2	31.6	33.0	34.1	10 31.36	— 33.78	10.17	23 10 7.75	13.31
22	Polaris, S. P. . .	†27	. .	. .	. .	. .	. .	5.0	17.0	37.0	. .	. .	. .	9 19.67	+ 42.51	10.81	1 10 12.99	130.41
	α Virginis	28	35.5	37.5	38.8	48.5	49.6	50.7	51.9	52.8	2.7	3.9	6.0	17 50.72	— 0.08	10.81	13 18 1.45	12.21
	α Bootis	29	0.0	2.1	3.4	13.3	14.6	15.9	17.1	18.3	28.5	29.8	31.9	9 15.90	0.02	10.81	14 9 26.69	10.06
23	Sun I	†30	37.9	39.9	41.2	51.5	52.6	53.5	54.8	56.0	6.4	7.6	9.8	53 53.75	0.10	10.81	15 54 4.46	. .
	Sun II	†31	56.8	58.9	0.2	10.4	11.4	12.5	13.8	15.1	25.5	26.7	29.0	56 12.75	0.10	10.81	15 56 23.46	. .
	α Ophiuchi	32	. .	. .	. .	. .	. .	. .	56.6	59.2	0.4	1.7	3.3	29 0.24	34.54	10.81	17 28 36.51	10.28
24	Venus II . . .	33	3.6	5.7	6.9	16.4	17.6	18.8	20.0	21.0	30.7	31.9	33.9	4 18.77	0.06	11.04	13 4 29.75	1.00
	Polaris, S. P. . .	34	. .	. .	. .	35.0	53.0	4.0	14.5	34.0	. .	. .	. .	10 4.10	3.24	11.04	1 10 11.90	129.64
	α Virginis	35	35.3	37.3	38.6	48.3	49.3	50.5	51.6	52.8	2.6	3.8	5.8	17 50.54	0.07	11.04	13 18 1.51	12.27
	α Bootis	36	59.8	1.9	3.2	13.3	14.4	15.7	17.0	18.0	28.3	29.6	31.8	9 15.73	0.03	11.03	14 9 26.73	10.12
25	Sun I	37	5.4	7.8	9.1	19.1	20.3	21.6	22.9	24.0	34.3	35.6	37.8	2 21.63	0.09	11.01	16 2 32.55	. .
	Sun II	38	24.9	27.2	28.6	38.7	39.8	41.1	42.4	43.4	53.8	55.0	57.2	4 41.10	0.09	11.01	16 4 52.02	. .
	α Ophiuchi	39	10.2	12.3	13.6	23.3	24.4	25.6	26.7	27.8	37.7	38.9	41.0	28 25.59	0.04	10.99	17 28 36.54	10.28
	δ Arietis	40	. .	28.5	29.8	40.0	40.9	42.2	43.4	44.7	55.0	56.1	. .	3 42.29	0.03	11.19	3 3 53.45	15.67
	Lacaille 1010 . .	41	8.2	10.3	11.8	22.6	23.7	24.1	26.4	27.6	38.4	39.7	42.0	7 24.07	0.09	11.19	3 7 35.17	11.96
	B. A. C. 1019 . .	42	8.3	10.5	11.8	23.0	24.2	25.7	26.9	28.1	39.5	40.8	43.3	10 25.65	0.09	11.19	3 10 36.75	11.66
	B. A. C. 1049 . .	43	1.9	4.0	5.4	15.9	16.9	18.2	19.4	20.6	31.2	32.5	34.6	15 18.24	0.08	11.19	3 15 29.35	12.24
	O. Arg. S. 2245 .	44	38.8	40.8	42.2	52.5	53.5	54.8	56.0	57.2	7.6	8.8	10.9	17 54.83	0.08	11.19	3 18 5.94	12.45
	B. A. C. 1073 . .	45	11.8	14.0	15.4	26.1	27.3	28.6	29.9	31.1	42.0	43.5	45.7	20 28.67	0.09	11.19	3 20 39.77	11.90
	Lacaille 1113 . .	46	13.2	15.4	16.7	27.3	28.3	29.7	30.9	32.0	42.6	43.8	46.0	23 29.63	0.08	11.19	3 23 40.74	12.22
	ε Eridani	47	6.9	8.8	10.2	19.9	20.8	22.0	23.2	24.2	34.1	35.2	37.4	26 22.06	0.06	11.19	3 26 33.19	13.06
	Lacaille 1137 . .	48	. .	. .	. .	52.2	53.5	54.9	56.3	57.3	8.0	9.3	11.4	29 0.36	5.59	11.19	3 29 5.96	12.01
	B. A. C. 1130 . .	49	42.0	44.2	45.6	56.4	57.5	58.9	0.2	1.3	12.5	13.6	16.1	32 58.94	0.09	11.19	3 33 10.04	11.78
	O. Arg. S. 2468 . .	50	46.7	48.5	49.9	0.3	1.4	2.7	4.0	5.3	15.7	16.9	19.3	36 2.79	0.08	11.19	3 36 13.90	12.18
Y.	Lacaille 1199 . .	51	55.8	57.9	59.4	10.3	11.5	12.8	14.2	15.3	26.4	27.7	29.9	38 12.84	0.09	11.19	3 38 23.94	11.68
	τ^6 Eridani	52	34.1	36.2	37.5	48.0	49.1	50.3	51.7	52.8	3.3	4.6	6.8	40 50.40	— 0.08	+11.19	3 41 1.51	— 12.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov, 19, 17.6	+ 10.19	— 0.003	— 0.102
22, 15.0	10.81	0.000	— 0.056
24, 15.0	11.02	— 0.010	. .
25, 4.6	+ 11.19	0.000	. .

6–7. Rather unsteady. Reduced from mean of 11 central wires.
26. Faint; through clouds.
27. Spoiled by Professor Newcomb.
30. Unsteady.
31. More steady.

Observations of November 19, and subsequent observations of the year, made clamp east.

		s.
November 19, ...	n. =	+ 0.220.
22–23, ...		0.100.
24–25, 13h. to 18h.		0.088.
25, 3h. to 5h.		+ 0.044.
5h. to 7h.		0.000.

E.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
25	O. Arg. S. 2571 .	1	27. 2	29. 3	30. 8	41. 7	42. 7	43. 9	45. 4	46. 6	57. 4	58. 8	1. 0	43 44. 07	— 0. 08	+11. 19	3 43 55. 18	— 11. 80
	Lacaille 1271 . .	†2	39. 0	41. 0	42. 4	52. 7	53. 7	55. 1	56. 3	57. 4	8. 1	9. 3	11. 5	47 55. 14	0. 08	11. 19	3 48 6. 25	12. 14
	Lacaille 1291 . .	3	15. 3	17. 5	18. 9	30. 0	31. 1	32. 5	34. 0	35. 2	46. 5	47. 7	50. 0	50 32. 61	0. 09	11. 19	3 50 43. 71	11. 51
	B. A. C. 1250 . .	4	48. 3	50. 8	52. 1	3. 3	4. 3	5. 8	7. 2	8. 2	19. 7	21. 0	23. 3	55 5. 82	0. 09	11. 19	3 55 16. 92	11. 40
	Lacaille 1341 . .	5	0. 5	3. 0	4. 3	15. 5	16. 6	17. 9	19. 4	20. 5	31. 7	33. 0	35. 6	59 18. 00	0. 09	11. 19	3 59 29. 10	11. 41
	o^1 Eridani	6	49. 3	51. 3	52. 4	2. 1	3. 0	4. 2	5. 4	6. 6	16. 1	17. 4	19. 4	5 4. 29	0. 06	11. 19	4 5 15. 42	13. 52
	Lacaille 1395 . .	7	15. 5	17. 8	19. 3	30. 3	31. 5	32. 9	34. 2	35. 4	46. 7	48. 1	50. 4	9 32. 82	0. 09	11. 19	4 9 44. 02	11. 37
	B. A. C. 1340 . .	8	35. 5	37. 5	38. 9	49. 5	50. 5	51. 9	53. 1	54. 2	5. 0	6. 3	8. 4	13 51. 89	0. 08	11. 19	4 14 3. 00	11. 86
	B. A. C. 1355 . .	9	. .	. .	. .	56. 4	57. 7	0. 0	17. 0	19. 7	21. 0	22. 4	23. 8	16 12. 25	29. 04	11. 19	4 15 54. 40	11. 78
	ε Tauri	10	15. 8	18. 0	19. 1	29. 3	30. 3	31. 4	32. 9	33. 9	44. 1	45. 5	47. 4	20 31. 61	0. 05	11. 19	4 20 42. 75	16. 04
	85 Tauri	11	41. 1	43. 2	44. 5	54. 5	55. 5	56. 7	57. 8	58. 9	8. 9	10. 3	12. 4	23 56. 71	0. 05	11. 19	4 24 7. 85	15. 67
	α Tauri	12	42. 5	44. 6	45. 8	55. 8	56. 8	58. 2	59. 3	0. 5	10. 4	11. 6	13. 8	27 58. 12	0. 05	11. 19	4 28 9. 26	15. 77
	Lacaille 1531 . .	13	38. 1	40. 4	41. 6	52. 6	53. 8	55. 0	56. 4	57. 6	8. 2	9. 6	11. 9	30 55. 02	0. 08	11. 19	4 31 6. 13	11. 59
	Lacaille 1541 . .	14	2. 6	4. 9	6. 1	17. 0	18. 1	19. 5	21. 8	22. 0	32. 9	34. 3	36. 5	33 19. 61	0. 09	11. 19	4 33 30. 71	11. 49
	Lacaille 1549 . .	15	. .	. .	.	20. 5	21. 8	24. 0	41. 3	44. 2	45. 7	47. 0	48. 5	35 36. 62	29. 68	11. 19	4 35 18. 13	11. 45
	Lacaille 1570 . .	16	36. 4	38. 4	39. 8	50. 6	51. 7	53. 1	54. 5	55. 6	6. 7	8. 0	10. 2	38 53. 18	0. 09	11. 19	4 39 4. 28	11. 46
	i Tauri	17	0. 2	2. 4	3. 8	13. 7	14. 8	16. 0	17. 4	18. 4	28. 7	29. 8	31. 9	43 16. 10	0. 05	11. 19	4 43 27. 24	16. 04
	Moon II	18	31. 1	33. 2	34. 6	45. 1	46. 2	47. 5	48. 8	49. 8	0. 5	1. 7	4. 0	49 47. 50	0. 04	11. 19	4 49 58. 65	. .
	B. Z. 513, 24 . .	19	. .	. .	. .	. .	. .	. .	18. 0	21. 0	22. 3	23. 9	25. 4	17 22. 12	39. 16	11. 19	5 16 54. 15	17. 60
	B. Z. 513, 25 . .	20	. .	30. 0	31. 5	42. 7	43. 6	45. 0	46. 4	47. 7	58. 8	0. 0	. .	16 45. 08	0. 06	11. 19	5 16 56. 21	17. 60
	Weisse 603 . . .	21	18. 3	19. 6	20. 9	22. 1	24. 3	. .	24. 5	26. 8	28. 1	29. 3	30. 7	24 54. 46	0. 31	11. 19	5 25 5. 34	14. 07
	δ Orionis	22	39. 4	41. 3	42. 5	52. 1	53. 1	54. 3	55. 5	56. 4	6. 1	7. 4	9. 3	24 54. 31	0. 06	11. 19	5 25 5. 44	14. 08
	ε Orionis	23	54. 6	56. 6	57. 9	7. 3	8. 3	9. 4	10. 6	11. 7	21. 4	22. 5	24. 7	29 9. 55	— 0. 06	11. 19	5 29 20. 68	— 13. 97
	δ Ursæ Minoris, S. P.	24	50. 0	17. 5	57. 0	16. 0	58. 5	39. 5	19. 5	1. 0	18. 0	57. 0	24. 0	15 38. 00	+ 0. 95	11. 19	6 15 50. 14	+ 100. 24
	γ Geminorum . . .	25	. .	. .	. .	39. 6	40. 7	41. 9	43. 1	. .	54. 3	55. 5	57. 7	29 47. 54	— 5. 64	11. 19	6 29 53. 09	— 15. 65
	51 Cephei	26	. .	. .	. .	11. 0	32. 0	56. 5	21. 0	. .	. .	. .	. .	35 45. 12	+ 11. 39	11. 19	6 36 7. 70	149. 23
26	β Orionis	27	35. 6	37. 4	38. 9	48. 5	49. 7	50. 9	52. 0	53. 3	2. 8	4. 0	6. 0	7 50. 83	— 0. 03	11. 22	5 8 2. 02	13. 36
	n Tauri	28	41. 2	43. 4	44. 7	54. 9	56. 2	57. 3	58. 5	59. 5	10. 2	11. 3	13. 5	10 57. 34	0. 01	11. 23	5 11 8. 56	16. 54
	115 Tauri	29	49. 3	51. 3	52. 7	2. 6	3. 6	4. 9	6. 1	7. 1	17. 5	18. 6	20. 9	19 4. 96	0. 01	11. 23	5 19 16. 18	15. 99
	δ Orionis	30	39. 3	41. 2	42. 3	52. 0	53. 0	54. 1	55. 2	56. 3	6. 0	7. 3	9. 3	24 54. 18	0. 03	11. 23	5 25 5. 38	14. 10
	ζ Tauri	31	5. 8	7. 9	9. 5	19. 5	20. 6	21. 8	23. 3	24. 2	34. 5	35. 9	38. 1	29 21. 92	0. 01	11. 23	5 29 33. 14	16. 36
	Uranus	32	30. 2	32. 2	33. 6	44. 1	45. 3	46. 4	47. 7	48. 7	59. 3	0. 6	2. 6	32 46. 43	0. 01	11. 23	5 32 57. 65	. .
	129 Tauri	33	31. 7	33. 5	34. 8	44. 7	45. 9	47. 1	48. 3	49. 3	59. 3	0. 4	2. 5	38 47. 05	0. 01	11. 23	5 38 58. 27	15. 73
	Moon II	34	28. 6	30. 8	32. 0	42. 6	43. 7	45. 0	46. 4	47. 5	57. 9	59. 3	1. 5	44 45. 03	— 0. 01	11. 23	5 44 56. 25	. .
	Lalande 11343 (1st *)	†35	. .	. .	. .	37. 9	38. 9	40. 2	41. 6	42. 9	. .	. .	. .	52 40. 30	+ 0. 04	11. 23	5 52 51. 57	16. 59
	Lalande 11343 (2d *)	†36	25. 9	28. 2	29. 5	. .	. .	. .	. .	. .	55. 2	56. 6	58. 7	52 42. 35	— 0. 05	11. 23	5 52 53. 53	16. 59
	ν Orionis	37	23. 6	25. 8	27. 0	36. 8	37. 9	39. 0	40. 4	41. 4	51. 5	52. 6	54. 8	59 39. 16	0. 02	11. 24	5 59 30. 38	15. 58
	η Geminorum . . .	38	14. 5	16. 4	17. 8	28. 6	29. 6	30. 8	32. 1	33. 3	43. 6	44. 9	47. 3	6 30. 81	0. 01	11. 24	6 6 42. 04	— 16. 46
	δ Ursæ Minoris, S. P.	†39	. .	. .	. .	46. 0	22. 0	3. 0	44. 0	2. 0	51. 0	19. 0	58. 0	22 53. 12	7 14. 65	11. 24	18 15 49. 71	+ 100. 52
	Polaris, S. P. .	†40	. .	. .	. .	. .	. .	. .	. .	. .	8. 0	52. 0	4. 0	19 1. 33	9 1. 66	11. 35	1 10 11. 02	— 128. 76
	Venus II	41	. .	. .	. .	. .	. .	. .	. .	48. 5	49. 7	51. 2	52. 5	11 50. 48	— 34. 82	11. 35	13 11 27. 01	0. 97
	α Bootis	42	59. 4	1. 5	2. 9	13. 0	14. 1	15. 4	16. 7	17. 7	27. 9	29. 2	31. 4	9 15. 38	+ 0. 02	11. 36	14 9 26. 76	10. 16
27	Sun I	43	36. 8	38. 8	40. 1	50. 2	51. 4	52. 7	54. 0	55. 1	5. 4	6. 7	8. 9	10 52. 74	— 0. 09	11. 39	16 11 4. 04	. .
	Sun II	44	56. 2	58. 4	59. 9	9. 9	11. 1	12. 4	13. 6	14. 7	25. 0	26. 4	28. 6	13 12. 38	0. 09	11. 39	16 13 23. 68	. .
29	Venus II	45	43. 8	45. 8	47. 0	56. 5	57. 6	58. 7	59. 9	1. 0	10. 7	11. 9	14. 1	21 58. 82	0. 02	12. 08	13 22 10. 88	0. 94
	Polaris, S. P. . .	46	. .	. .	. .	. .	. .	. .	24. 0	28. 0	38. 0	52. 0	12. 0	32 30. 80	— 22 33. 60	12. 09	1 10 9. 29	126. 99
	α Bootis	47	58. 8	0. 9	2. 2	12. 3	13. 4	14. 7	15. 9	16. 9	27. 3	28. 4	30. 7	9 14. 68	+ 0. 03	12. 10	14 9 26. 81	10. 22
	α Coronæ Borealis .	48	25. 6	27. 9	29. 4	40. 1	41. 2	42. 6	43. 9	45. 0	55. 9	57. 3	59. 4	28 42 57	+ 0. 05	12. 12	15 28 54. 74	9. 08
30	Sun I	49	27. 8	29. 8	31. 1	41. 5	42. 7	43. 8	45. 2	46. 4	56. 9	58. 1	0. 2	23 43. 95	— 0. 06	12. 13	16 23 56. 02	. .
	Sun II	50	48. 2	50. 4	51. 7	1. 9	2. 9	4. 1	5. 5	6. 7	17. 1	18. 4	20. 6	26 4. 32	— 0. 06	12. 13	16 26 16. 39	. .
	α Lyræ	51	47. 7	50. 0	51. 8	3. 7	4. 9	6. 7	8. 3	9. 4	21. 8	23. 4	25. 9	32 6. 69	+ 0. 08	12. 13	18 32 18. 90	7. 02
	6 Cancri	52	41. 9	44. 1	46. 5	56. 2	57. 4	58. 7	59. 8	0. 9	12. 3	13. 5	15. 8	54 58. 83	+ 0. 11	12. 35	7 55 11. 29	— 16. 40
	λ Ursæ Minoris, S. P.	53	. .	. .	. .	18. 0	25. 0	21. 0	17. 0	20. 0	. .	. .	. .	59 20. 20	— 13. 56	+12. 35	19 59 18. 99	+ 274. 29

2. Blurred.
35–36. Observed for 1 Geminorum.
39. Very unsteady; observed with difficulty.
40. Faint; through fog.

November 26, 7h. 0m. Image east $\overset{r.}{0.22}$. Clamp west.

Night cold and very unfavorable.

November 26, . . . n. = + 0. 070 s.
26–27, 13h. to 17h. 0. 154.
29–30, 13h. to 19h. 0. 123.
Nov. 30.—Dec. 1, 7h. to 19h. + 0. 221.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Nov. 26, 5. 5	+ 11. 23	+ 0. 013	— 0. 033
14. 2	11. 36	0. 013	. .
30, 0. 4	+ 12. 24	+ 0. 014	— 0. 010

[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Observed R. Ascension.	Reduct'n to 1860.0.
					s.	s.	s.	h. m. s.	s.
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	− [illegible]	8 6 27.06	− 12.22
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 10 30.17	11.23
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 13 30.54	11.24
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	8 14 11.39	11.25
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	8 21 3.19	14.81
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	8 25 19.27	11.19
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 29 44.59	14.37
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 33 25.26	10.96
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 3[illegible]	11.06
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 3[illegible] 9.06	11.06
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 42 23.85	11.07
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 45 39.90	10.99
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 49 34.55	11.11
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 49 55.30	11.08
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8 53 11.13	11.08
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	8 57 16.11	11.23
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 0 23.85	14.18
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 4 32.41	11.74
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 7 27.08	. .
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 11 24.31	14.52
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 16 58.70	11.48
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 24 40.98	13.91
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 28 9.90	11.44
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 33 54.33	13.83
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	[illegible]	9 38 8.29	14.59
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	12.51	12 12 56.96	12.33
k		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	12.52	13 25 49.86	0.91
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	12.52	14 9 26.85	10.25
		[illegible]	[illegible]	[illegible]	[illegible]	− [illegible]	12.53	15 28 54.78	9.09
Dec. 1		Sun I	30	[illegible]	[illegible]	− [illegible]	12.53	16 28 15.04	. .
		Sun II	31	[illegible]	[illegible]	− [illegible]	12.53	16 30 35.66	. .
	α	Lyræ	32	[illegible]	[illegible]	− 0.16	12.54	18 32 18.87	7.01
		Polaris	33	[illegible]	[illegible]	− [illegible]	12.57	1 10 8.36	126.00
	θ	Ceti	34	[illegible]	[illegible]	− [illegible]	12.57	1 17 14.96	13.37
		Lalande [illegible]	35	[illegible]	[illegible]	0.11	12.57	1 21 38.82	12.64
		Lalande [illegible]	36	[illegible]	[illegible]	[illegible]	12.57	1 25 41.50	12.76
		O. Arg. [illegible]	37	[illegible]	[illegible]	[illegible]	12.57	1 33 29.39	12.75
		O. Arg. [illegible]	38	[illegible]	[illegible]	0.11	12.57	1 39 16.12	12.56
		Lalande [illegible]	39	[illegible]	[illegible]	− 0.12	12.57	1 43 46.90	12.39
	β	Arietis	40	[illegible]	[illegible]	− [illegible]	12.57	1 47 9.69	14.97
	ο	Leonis	41	[illegible]	[illegible]	[illegible]	12.74	9 33 54.38	13.87
	μ	Leonis	42	[illegible]	44 42.47	[illegible]	12.74	9 45 2.29	14.61
	ν	Leonis	43	[illegible]	[illegible]	− 0.03	12.74	9 50 55.18	13.83
		Moon II	44	[illegible]	54 22.41	− 26.74	12.74	9 54 8.41	. .
Y.	α	Bootis	45	[illegible]	[illegible]	− 0.09	12.76	14 9 26.81	10.97
2		Sun I	46	5.5 7.8 9.0 19.4 20.5 21.7 22.8 24.2 [illegible]	32 21.76	− 0.12	12.76	16 32 34.40	. .
		Sun II	47	26.2 28.2 29.5 40.0 40.9 42.1 43.0 44.7 [illegible]	34 42.20	− 0.12	12.76	16 34 54.93	. .
	α	Aquilæ	48	40.5 42.4 43.7 53.4 54.4 55.6 56.8 57.8 7.5 8.8 10.2	43 55.62	+ 0.03	12.77	19 44 8.42	11.32
		Weisse 1183	49	38.7 40.6 41.8 51.4 52.4 53.5 54.7 55.8 5.4 6.6 8.6	57 53.52	− 0.02	12.79	23 58 6.36	13.29
		Weisse 10	50	4.0 6.1 7.3 16.9 17.9 19.0 20.3 21.3 31.0 32.1 34.0	2 19.07	0.00	12.79	0 2 31.86	13.33
		Weisse 44	51	14.3 16.3 17.6 27.1 28.0 29.3 30.5 31.5 41.1 42.3 44.4	3 29.31	0.00	12.79	0 3 42.10	13.34
	γ	Pegasi	52	47.0 49.0 50.3 0.0 1.1 2.4 3.6 4.6 14.0 15.8 17.9	6 2.39	+ 0.06	12.79	0 6 15.24	13.50
		Lalande 344	53	37.7 40.0 41.2 51.9 52.9 54.1 55.5 56.6 7.5 8.7 11.0	12 54.28	− 0.14	12.79	0 13 6.93	13.10
		B. A. C. 77	†54	54.6 56.9 58.3 9.6 10.7 12.0 13.6 14.7 26.1 27.7 29.9	16 12.19	− 0.18	+ 12.79	0 16 24.80	− 13.01

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	c.
	h.	s.	s.	s.
Dec. 1.	18.6	+ 12.54	+ 0.004	− 0.110
2.	18.7	+ 12.77	+ 0.003	. .

30–31. Both limbs serrated and unsteady.
33. Blurred and unsteady.
44. Stopped by clouds.
54. Blurred.

December 1, 2h. 5m. Image east 0.23. Clamp east.

December 1, 1h. to 10h. n. = + 0.189.
1–2, 14h. to 2h. + 0.271.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
3.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 2	Polaris	†1	37.0	55.0	47.5	14.0	54.0	43.0	31.0	13.5	44.0	34.0	53.6	9 44.18	+ 10.65	+12.79	1 10 7.62	− 125.32
	β Arietis	†2	40.9	43.1	44.4	54.5	55.5	56.9	58.0	59.1	9.6	10.8	13.0	46 56.89	0.09	12.79	1 47 9.77	14.97
	Moon II	†3	54.6	56.6	58.0	7.7	8.8	10.0	11.2	12.3	22.0	23.2	25.2	40 9.96	+ 0.00	13.15	10 40 23.11	. .
	α Coronæ Borealis	4	- -	- -	- -	- -	- -	- -	15.7	18.3	19.7	21.2	22.7	29 19.52	− 37.75	13.04	15 28 54.81	9.12
3	Sun I	5	25.2	27.5	28.9	39.1	40.2	41.6	42.9	43.9	54.3	55.6	57.9	36 41.55	0.09	13.02	16 36 54.48	. .
	Sun II	6	46.0	48.2	49.5	59.8	0.9	2.2	3.7	4.8	15.0	16.2	18.6	39 2.26	− 0.09	13.02	16 39 15.19	. .
	α Lyræ	7	46.7	49.2	50.8	2.9	4.2	5.7	7.3	8.6	20.9	22.6	25.0	32 5.81	+ 0.14	12.98	18 32 18.93	7.10
	β Lyræ	8	31.7	34.0	35.5	46.9	48.2	49.4	50.9	52.1	3.6	5.0	7.5	44 49.53	0.11	12.97	18 45 2.61	7.93
	α Aquilæ	9	40.4	42.4	43.7	53.2	54.2	55.4	56.6	57.7	7.4	8.6	10.7	43 55.48	0.02	12.95	19 44 8.45	11.31
	Weisse 788	10	13.7	15.8	17.0	26.6	27.5	28.8	29.9	31.0	40.6	42.0	44.0	45 28.81	0.02	12.84	0 45 41.67	13.73
	ε Piscium	11	26.7	28.6	30.0	39.5	40.5	41.7	43.0	44.0	53.7	54.9	56.9	55 41.77	+ 0.02	12.84	0 55 54.63	13.82
	O. Arg. S. 623	12	54.8	56.1	58.5	9.1	10.4	11.7	13.1	14.3	25.3	26.5	28.6	59 11.67	− 0.11	12.83	0 59 24.39	12.77
	Polaris	13	- -	- -	- -	15.0	56.0	48.0	31.0	16.0	. .	. .	. .	9 45.20	+ 9.19	12.83	1 10 7.22	124.62
	θ Ceti	14	47.0	49.0	50.3	59.9	0.9	2.0	3.3	4.4	14.0	15.3	17.3	17 2.13	− 0.04	12.83	1 17 14.92	13.35
	Lacaille 435	15	3.7	5.8	7.2	18.2	19.3	20.6	21.9	23.1	34.0	35.5	37.8	25 20.65	0.11	12.82	1 25 33.36	12.56
	Lacaille 452	16	- -	- -	- -	43.3	44.4	45.8	47.1	48.3	. .	. .	. .	27 45.78	− 0.06	12.82	1 27 58.54	12.56
	Weisse 576	17	50.5	52.5	53.7	3.3	4.3	5.5	6.8	7.7	17.4	18.6	20.6	33 5.54	+ 0.02	12.82	1 33 18.38	14.06
	ε Sculptoris	†18	48.5	50.7	52.1	2.6	3.8	5.1	6.4	7.7	18.4	19.6	21.9	39 5.16	− 0.10	12.82	1 39 17.88	12.61
	Santini 102	19	5.7	7.8	8.9	18.6	19.6	20.9	22.0	23.1	32.7	34.0	36.0	41 20.85	+ 0.02	12.82	1 41 33.69	14.15
	β Arietis	20	40.9	43.0	44.5	54.5	55.6	56.8	58.2	59.2	9.4	10.7	12.9	46 56.88	+ 0.06	12.82	1 47 9.76	14.96
	56 Ceti	21	50.6	52.6	54.0	4.5	5.5	6.7	8.0	9.1	19.6	21.0	23.2	50 6.80	− 0.09	12.81	1 50 19.52	12.68
	Lacaille 586, (1st *)	22	- -	- -	- -	40.8	42.1	44.2	0.8	3.4	4.7	6.2	7.6	52 56.22	28.49	12.81	1 52 40.54	12.64
	Lacaille 586, (2d *)	23	- -	- -	- -	25.7	27.0	28.4	29.7	30.9	. .	. .	. .	52 28.34	0.04	12.81	1 52 41.11	12.64
	α Draconis, S. P.	24	- -	- -	- -	52.3	49.0	46.2	43.6	38.2	2.7	58.1	54.6	1 28.09	1 1.19	12.81	14 0 39.71	3.82
	O. Arg. S. 1388	25	30.3	32.5	33.9	44.9	46.0	47.4	48.7	49.9	1.0	2.3	4.8	5 47.43	0.12	12.81	2 6 0.12	12.22
	O. Arg. S. 1404	26	53.2	55.5	56.9	8.0	9.0	10.4	11.8	13.1	24.1	25.6	27.8	7 10.49	0.12	12.81	2 7 23.18	12.21
	67 Ceti	27	45.9	47.9	49.1	58.7	59.7	0.8	2.0	3.0	12.8	14.0	16.1	10 0.91	0.03	12.81	2 10 13.69	13.55
	Lacaille 699	28	13.7	15.9	17.3	27.8	28.9	30.1	31.4	32.6	43.2	44.4	46.7	13 30.18	0.10	12.81	2 13 42.89	12.50
	Lalande 4410	29	- -	- -	- -	27.0	28.1	29.3	30.6	31.7	41.9	43.1	45.3	15 34.62	5.29	12.80	2 15 42.13	12.87
	Lacaille 756	30	54.4	56.4	57.9	8.3	9.4	10.7	11.9	13.0	23.7	25.0	27.2	23 10.72	− 0.10	12.80	2 23 23.42	12.44
	Lacaille 772	31	1.0	3.2	4.6	15.4	16.4	17.8	. .	20.3	31.2	32.6	35.0	26 17.75	+ 0.02	12.80	2 26 30.57	12.22
	Lacaille 814	32	. .	. .	. .	54.9	56.0	57.2	58.6	59.8	. .	. .	. .	32 57.30	− 0.06	12.80	2 33 10.04	12.12
	γ Ceti	33	49.3	51.3	52.5	2.0	3.1	4.4	5.4	6.5	16.2	17.3	19.4	36 4.31	0.00	12.80	2 36 17.11	14.18
	* + 0° 40′	†34	55.5	57.4	58.7	8.1	9.1	10.3	11.6	12.6	22.3	23.5	25.2	4 10.39	0.01	12.74	11 4 23.12	12.84
	δ Crateris	35	5.1	7.0	8.3	18.2	19.1	20.4	21.6	22.8	32.7	34.0	36.0	12 20.47	− 0.06	12.74	11 12 33.15	12.56
	σ Leonis	36	40.0	42.0	43.2	53.0	53.9	55.0	56.4	57.4	6.9	8.3	11.3	13 55.22	+ 0.01	12.74	11 14 7.97	12.86
	ι Leonis	37	22.5	24.5	25.7	35.3	36.5	37.7	38.9	39.9	49.8	51.0	53.0	16 37.71	+ 0.03	12.74	11 16 50.48	12.90
	τ Leonis	38	29.4	31.4	32.5	42.2	43.2	44.3	45.4	46.5	56.2	57.3	59.4	20 44.35	0.00	12.74	11 20 57.09	12.77
	Moon II	†39	35.0	37.0	38.3	48.0	49.0	50.2	51.3	52.4	2.1	3.3	5.5	26 50.19	− 0.02	12.74	11 27 2.91	. .
	υ Leonis	40	31.9	33.7	35.2	44.6	45.8	46.9	48.0	49.1	58.6	59.6	1.7	29 46.83	− 0.01	12.74	11 29 59.56	12.68
	ν Virginis	41	24.5	26.6	27.8	37.3	38.3	39.6	40.7	41.8	51.6	52.9	54.9	38 39.64	+ 0.02	12.74	11 38 52.40	12.65
	β Leonis	42	39.2	41.1	42.5	52.4	53.4	54.6	55.8	56.8	6.7	8.1	10.2	41 54.62	+ 0.06	12.74	11 42 7.42	12.49
	Venus II	43	31.0	33.1	34.5	. .	. .	. .	. .	. .	58.2	59.3	1.3	36 46.23	− 0.09	12.68	13 36 58.82	0.90
	α Bootis	44	58.2	0.3	1.6	11.7	12.8	14.1	15.4	16.4	26.6	28.0	30.2	9 14.12	+ 0.09	12.68	14 9 26.89	10.31
	α Cor. Borealis	45	25.1	27.3	28.8	39.5	40.6	41.9	43.2	44.4	55.1	56.6	58.8	28 41.94	0.13	12.68	15 28 54.75	9.14
	α Serpentis	46	5.6	7.7	8.9	18.6	19.6	20.7	21.9	23.0	. .	. .	. .	37 15.75	+ 5.04	12.68	15 37 33.47	− 11.09
4	Sun I	†47	46.4	48.6	49.8	0.1	1.1	2.4	3.6	4.8	15.4	16.5	18.6	41 2.48	− 0.12	12.67	16 41 15.03	. .
Y.	Sun II	†48	7.3	9.4	10.8	21.0	22.2	23.4	24.6	25.8	36.3	37.6	39.9	43 23.48	− 0.12	12.67	16 43 36.03	. .
	δ Ursæ Minoris	†49	- -	- -	- -	54.0	9.0	30.0	50.0	7.0	. .	. .	. .	15 30.00	+ 5.20	12.67	18 16 47.87	+ 102.29
	α Lyræ	50	46.9	49.4	50.5	3.1	4.5	6.0	7.6	8.8	21.1	22.6	25.2	32 5.97	0.21	12.67	18 32 18.85	− 6.98
	β Lyræ	51	31.9	34.2	35.8	47.1	48.3	49.7	51.0	52.4	3.9	5.3	7.9	44 49.77	0.17	12.67	18 45 2.61	7.92
	α Aquilæ	†52	40.6	42.6	43.8	53.4	54.5	55.7	57.0	57.9	7.7	8.9	10.9	43 55.73	+ 0.03	12.67	19 44 8.43	11.31
	O. Arg. S. 23036	53	34.7	36.9	38.2	48.3	49.3	50.5	51.8	52.7	2.9	4.3	6.3	38 50.54	− 0.07	12.67	23 39 3.14	13.23
	δ Sculptoris	54	21.5	23.7	25.0	35.8	37.0	38.4	39.7	41.0	52.0	53.2	55.6	41 38.45	0.12	12.67	23 41 51.00	13.30
	Lacaille 9630	55	10.4	12.8	14.0	24.7	25.7	27.0	28.3	29.6	40.3	41.5	43.8	45 27.10	− 0.10	+12.67	23 45 39.67	− 13.23

1. Steady. 2. Through clouds. 3. Faint; through clouds.
18. Closely followed by a companion of the 10th mag.
34. Cloudy after 11h. 39. Limb steady.
47–48. Very steady. 49. Very faint.
52. After α Aquilæ slightly reduced the azimuth error.

r.
December 2, 2h. Image east 0.30. Clamp east.
Image east 0.22. Clamp west.
Reduced the level error.
December 3, 3h. Image west 0.03. Clamp east.

s.
December 2–3, 10h. to 3h. n. = + 0.189.
3, 11h. to 12h. 0.189.
3–4, 13h. to 20h. 0.271.
4, 23h. to 3h. + 0.189.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Dec. 3, 22.4	+ 12.89	− 0.022	− 0.010
3, 11.4	12.74	0.010	. .
4, 20.8	12.67	0.001	− 0.010
4, 12.4	+ 12.55	− 0.001	. .

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Dec. 4	O. Arg. S. 23120	1	9.9	12.1	13.3	23.8	24.8	26.0	27.5	28.5	39.1	40.4	42.6	47 26.18	— 0.10	+12.67	23 47 38.75	— 13.22
	O. Arg. S. 23181	2	. .	. .	. .	28.5	29.4	30.8	32.0	33.1	. .	. .	. .	53 30.76	0.05	12.67	23 53 43.38	13.19
	O. Arg. S. 23185	3	11.6	13.1	14.3	15.7	18.1	. .	23.8	26.4	27.6	29.0	30.5	53 51.01	0.37	12.67	23 54 3.31	13.19
Y.	Weisse 1186	4	45.3	47.3	48.4	57.9	58.9	0.0	1.2	2.3	12.0	13.1	15.1	58 0.14	0.00	12.67	23 58 12.81	13.28
	Weisse 10	5	4.4	6.3	7.5	17.0	18.1	19.2	20.4	21.4	31.1	32.2	34.3	2 19.26	0.00	12.67	0 2 31.93	13.31
	Weisse 88	6	35.1	37.2	38.4	47.8	48.8	50.0	51.2	52.3	1.9	3.1	5.1	5 50.08	0.00	12.67	0 6 2.75	13.34
	Harvard Z. 97	†7	36.6	38.6	39.8	49.4	50.3	51.5	52.7	53.8	3.5	4.7	6.7	6 51.60	0.01	12.67	0 7 4.26	13.33
	Neptune	†8	7.0	9.0	10.1	19.7	20.8	22.0	23.1	24.2	33.8	35.0	37.0	14 21.97	0.01	12.67	0 14 34.63	. .
	Lacaille 83	9	28.1	30.3	31.6	42.5	43.7	45.0	46.4	47.5	58.5	59.9	2.3	18 45.07	0.12	12.67	0 18 57.62	13.01
	12 Ceti	10	39.4	41.4	42.5	52.1	53.0	54.3	55.5	56.5	6.2	7.4	9.5	22 54.35	— 0.03	12.67	0 23 6.99	13.33
	Weisse 749	11	15.8	17.7	18.9	38.5	39.5	40.7	42.0	42.9	52.7	53.9	55.9	43 40.77	+ 0.01	12.67	0 43 53.45	13.71
	* + 1° 16′	12	34.2	36.3	37.4	46.9	47.9	49.0	50.2	51.3	1.1	2.3	4.2	46 49.16	— 0.01	12.67	0 47 1.82	13.57
	Weisse 871	13	16.2	18.0	19.2	28.8	29.8	31.0	32.1	33.2	42.8	44.0	46.0	50 31.01	— 0.01	12.67	0 50 43.67	13.60
	Lalande 1737	14	10.0	12.0	13.3	23.0	23.9	25.2	26.4	27.4	37.2	38.3	40.4	53 25.19	+ 0.02	12.67	0 53 37.88	13.84
	Weisse 946	15	15.7	17.9	19.2	28.8	29.8	31.0	32.3	33.3	43.0	44.3	46.3	54 31.05	— 0.05	12.67	0 54 43.67	13.85
	Polaris	16	40.5	59.0	49.5	15.0	55.0	45.0	34.0	17.0	47.0	36.0	57.0	9 46.82	+ 7.26	12.67	1 10 6.75	123.86
	η Piscium	17	46.0	48.1	49.4	59.2	0.3	1.4	2.7	3.8	13.7	15.0	17.0	24 1.51	+ 0.04	12.67	1 24 14.22	14.37
	Lacaille 444	18	19.0	21.2	22.7	33.2	34.2	35.6	36.8	38.0	48.6	50.8	52.1	26 35.66	— 0.10	12.67	1 26 48.23	12.70
	Lalande 2942	19	48.5	50.5	51.9	2.0	2.9	4.2	5.4	6.5	16.8	17.9	20.1	29 4.25	0.07	12.67	1 29 16.85	12.98
	O. Arg. S. 992	20	0.3	2.5	3.9	14.4	15.4	16.8	18.1	19.1	29.6	30.9	33.2	33 16.75	— 0.09	12.67	1 33 29.33	12.73
	Weisse 669	21	42.0	44.1	45.4	55.2	56.1	57.4	58.5	59.7	9.6	10.7	12.9	36 57.42	+ 0.04	12.67	1 37 10.13	14.44
	Weisse 721	22	. .	. .	. .	35.2	36.2	38.5	54.0	56.5	57.8	59.2	0.4	40 49.72	— 26.76	12.67	1 40 35.63	14.50
	Lalande 3344	23	. .	. .	. .	33.9	34.9	36.0	37.3	38.5	48.4	49.6	51.5	42 41.26	5.06	12.67	1 42 48.87	14.51
	ξ Piscium	†24	17.7	18.8	19.9	21.0	22.0	. .	50.2	52.6	53.6	55.0	56.3	46 36.71	16.82	12.67	1 46 32.56	13.95
	O. Arg. S. 1256	25	55.7	57.9	59.2	9.8	10.9	12.3	13.6	14.9	25.7	27.1	29.3	56 12.40	— 0.11	12.66	1 56 24.95	12.41
	α Arietis	†26	3.6	5.8	7.1	17.5	18.6	19.7	21.0	22.1	32.7	33.9	36.1	59 19.83	+ 0.07	12.66	1 59 32.56	15.34
	Lacaille 771	27	22.3	24.4	25.7	36.2	37.4	38.7	39.9	41.0	51.6	52.8	55.1	25 38.65	— 0.09	12.66	2 25 51.22	12.50
	O. Arg. S. 1655	28	14.7	16.8	18.1	28.2	29.2	30.4	31.7	32.7	42.9	44.2	46.3	28 30.47	0.07	12.66	2 28 43.06	12.86
	Lacaille 796	29	. .	. .	. .	23.9	25.1	27.5	44.0	46.6	48.0	49.4	50.9	30 39.42	28.70	12.66	2 30 23.38	12.42
	Lacaille 813	30	. .	. .	. .	39.0	40.2	41.5	42.9	44.0	54.8	56.2	58.4	32 47.12	— 5.64	12.66	2 32 54.14	12.27
	γ Ceti	†31	49.6	51.7	52.8	2.3	3.3	4.4	5.6	6.5	16.4	17.5	19.6	36 4.52	0.00	12.66	2 36 17.18	14.18
	δ Leonis	32	24.1	26.5	27.6	37.8	38.8	40.1	41.4	42.6	53.0	54.1	56.4	6 40.22	+ 0.02	12.55	11 6 52.79	13.27
	δ Crateris	33	. .	. .	. .	18.4	19.5	20.7	22.0	23.0	. .	. .	. .	12 20.72	+ 0.02	12.55	11 12 33.29	12.59
	Weisse 284	34	18.9	20.8	22.0	31.6	32.6	33.8	35.1	36.1	45.7	46.8	48.8	17 33.84	— 0.01	12.55	11 17 46.38	12.82
	τ Leonis	35	29.5	31.4	32.6	42.1	43.1	44.5	45.6	46.5	56.3	57.5	59.5	20 44.42	0.01	12.55	11 20 56.96	12.80
	Weisse 349	36	. .	. .	. .	. .	. .	. .	15.6	18.1	19.2	20.6	21.8	21 19.06	33.73	12.55	11 20 57.88	12.80
	B. A. C. 3917	37	56.6	58.6	59.7	9.4	10.4	11.5	12.8	13.8	23.5	24.5	26.6	24 11.58	0.01	12.55	11 24 24.12	12.78
	υ Leonis	†38	31.9	34.0	35.1	44.9	45.9	47.0	48.3	49.4	58.9	0.1	2.2	29 47.06	0.01	12.55	11 59 59.60	12.71
	B. A. C. 3962	39	58.6	0.8	1.8	11.4	12.3	13.5	14.7	15.9	25.5	26.5	28.7	33 13.61	0.01	12.55	11 33 26.15	12.70
	Weisse 624	40	54.8	56.9	58.1	7.7	8.6	9.7	11.0	11.9	21.7	22.7	24.8	36 9.81	— 0.01	12.55	11 36 22.35	12.68
	β Leonis	†41	39.4	41.4	42.8	52.7	53.7	54.8	56.0	57.2	7.0	8.1	10.3	41 54.86	+ 0.01	12.55	11 42 7.42	12.53
	B. A. C. 4006	42	37.8	40.0	41.0	50.6	51.6	52.9	54.0	55.0	4.7	5.8	8.1	43 52.86	— 0.02	12.55	11 44 5.39	12.63
	η Virginis	43	29.7	31.6	32.8	42.5	43.4	44.5	45.8	46.7	56.3	57.5	59.6	12 44.58	— 0.01	12.55	12 12 57.12	12.45
	Polaris, S. P.	44	26.0	50.0	58.0	5.0	11.0	. .	. .	. .	. .	. .	. .	47 6.00	+ 22 47.37	12.55	1 10 5.92	123.64
5	Moon II	45	56.8	58.9	0.2	10.1	11.1	12.5	13.6	14.8	24.8	26.0	28.0	5 12.44	— 0.01	12.44	13 5 24.87	. .
R.	Polaris, S. P.	46	. .	. .	. .	24.0	45.0	54.0	7.0	23.0	. .	. .	. .	9 54.60	1.70	12.44	1 10 5.34	123.02
	α Virginis	47	34.1	36.0	37.5	47.3	48.3	49.4	50.6	51.6	1.6	2.7	4.9	17 49.45	0.01	12.44	13 18 1.88	12.57
6	Venus II	48	58.4	0.4	1.6	11.3	12.3	13.6	14.7	15.8	25.5	26.6	28.7	48 13.54	0.02	12.35	13 48 25.87	0.87
Y.	Moon II	49	30.6	32.6	34.0	44.0	45.0	46.4	47.7	48.7	59.0	0.3	2.5	58 46.44	+ 0.02	12.35	13 58 58.77	. .
	α Bootis	50	58.7	0.8	2.2	12.3	13.4	14.5	15.7	16.8	27.2	28.5	30.6	9 14.61	+ 0.01	12.35	14 9 26.97	10.39
	α Cor. Borealis	51	25.4	27.9	29.3	40.0	41.0	42.4	43.6	44.9	55.7	57.1	59.3	28 42.42	+ 0.01	12.38	15 28 54.81	9.19
	α Serpentis	†52	6.2	8.1	9.2	19.1	20.0	21.2	22.4	23.4	33.0	34.1	36.4	37 21.19	0.00	12.39	15 37 33.58	— 11.14
7	Sun I	53	51.7	54.0	55.5	. .	. .	. .	. .	. .	21.2	22.3	24.6	54 8.22	— 0.07	12.42	16 54 20.57	. .
	Sun II	54	13.5	15.8	16.8	. .	. .	. .	. .	. .	42.5	43.8	46.0	56 29.73	— 0.07	+12.42	16 56 42.08	. .

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	c.
	h.	s.	s.	s.
Dec. 5,	13.3	+ 12.44	+ 0.010	— 0.010
7,	20.1	+ 12.49	+ 0.023	. .

7. Preceded by a star of the same magnitude to the southward.
8. Through clouds.
24. Through clouds.
26. Through clouds.
31. Stars steady; interrupted by clouds.
38. Unsteady.
41. Unsteady.
52. A little uncertain.

December 4, 2h. 10m. Image east r. 0.02. Clamp east.
7, ... Image west 0.09. Clamp east; stars unsteady.

December 4-5, 11h. to 13h. n. = + s. 0.070.
5, 13h. to 14h. 0.004.
6-7, ... + 0.050.

ATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860. 0.
863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
ec. 7	α Lyræ	1	..	..	..	21.6	23.2	25.6	45.2	48.1	49.7	51.5	53.0	32 39.74	— 33.29	+12.45	18 32 18.90	— 6.97
	β Lyræ	2	32.2	34.5	36.0	47.4	48.6	50.0	51.4	52.7	4.2	5.8	8.1	44 50.08	+ 0.02	12.46	18 45 2.56	7.91
	α Aquilæ	3	40.9	42.9	44.2	53.7	54.8	56.0	57.2	58.2	8.0	9.1	11.2	43 56.02	0.00	12.48	19 44 8.50	11.29
Y.	B. A. C. 8308 (1st *)	4	26.5	28.2	29.4	30.8	31.4	..	41.2	43.8	45.3	46.8	48.3	47 7.17	— 0.32	12.58	23 47 19.43	13.18
	B. A. C. 8308 (2d *)	5	50.9	53.0	54.3	5.1	6.2	7.6	8.9	10.1	21.0	22.4	24.7	47 7.65	0.04	12.58	23 47 20.19	13.18
	ω Piscium	6	53.0	55.1	56.4	5.8	6.9	8.1	9.3	10.3	20.0	21.3	23.2	52 8.13	0.00	12.58	23 52 20.71	13.27
	Lacaille 9701	7	.	43.1	44.6	54.9	56.0	57.4	58.7	59.8	10.5	11.9	..	55 57.43	0.02	12.58	23 56 9.99	13.13
	Weisse 1250	8	57.2	59.1	0.3	9.9	11.0	12.2	13.3	14.2	24.1	25.2	27.2	1 12.15	0.01	12.58	0 1 24.72	13.28
	Weisse 51	9	40.6	42.4	43.8	53.4	54.4	55.4	56.5	57.6	7.4	8.7	10.6	3 55.53	0.01	12.58	0 4 8.10	13.30
	Harvard Z., 97	10	49.6	50.6	51.8	52.8	53.8	..	21.9	24.2	25.4	26.7	27.8	7 8.46	16.81	12.58	0 7 4.23	13.29
	O. Arg. S. 117	11	7.3	9.5	10.8	20.8	21.9	23.2	24.4	25.4	35.6	36.8	38.9	12 23.15	0.03	12.58	0 12 35.70	13.12
	Neptune	12	3.7	5.6	6.8	16.4	17.4	18.7	19.8	20.8	30.5	31.6	33.6	14 18.63	0.01	12.59	0 14 31.21	..
	44 Piscium	13	59.3	1.3	2.5	12.2	13.2	14.3	15.6	16.7	26.3	27.6	29.4	18 14.40	0.01	12.59	0 18 26.98	13.37
	12 Ceti	14	39.4	41.4	42.6	52.1	53.1	54.5	55.5	56.4	6.3	7.5	9.5	22 54.37	0.01	12.59	0 23 6.95	13.30
	Santini 30	15	28.7	30.5	31.7	41.3	42.4	43.5	44.7	15.8	55.5	56.7	58.6	26 43.58	0.01	12.59	0 26 56.16	13.45
	* 127 W. + 2° 33′	16	11.8	13.9	14.9	24.5	25.5	26.6	27.8	28.9	38.5	39.7	41.8	28 26.72	0.01	12.59	0 28 39.30	13.47
	Weisse 556	17	51.6	53.8	54.9	4.5	5.5	6.7	7.9	8.9	18.6	19.7	21.7	33 6.71	0.01	12.59	0 33 19.29	13.53
	Weisse 620	18	3.5	5.5	6.7	16.3	17.3	18.5	19.7	20.7	30.4	31.4	33.6	36 18.51	0.01	12.59	0 36 31.09	13.58
	Weisse 658	19	..	..	..	..	..	..	56.8	59.0	0.2	1.6	2.9	39 0.10	33.67	12.59	0 38 39.02	13.49
	Weisse 733	20	34.5	36.5	37.8	47.3	48.4	49.6	50.7	51.8	1.4	2.6	4.6	42 49.56	0.00	12.60	0 43 2.16	13.66
	O. Arg. S. 542	21	12.9	15.1	16.4	27.3	28.4	29.7	31.0	32.3	43.3	44.6	46.8	51 29.80	— 0.04	12.60	0 51 42.36	12.76
	ε Piscium	22	26.8	28.8	30.0	39.7	40.6	41.8	43.0	44.0	54.0	55.1	57.1	55 41.90	0.00	12.60	0 55 54.50	13.77
	Polaris	†23	44.0	3.0	52.0	15.0	59.0	49.0	37.0	19.0	51.0	40.0	2.0	9 50.09	+ 1.62	12.61	1 10 4.32	121.95
	ν Piscium	24	55.3	57.4	58.5	8.1	9.0	10.3	11.5	12.5	22.0	23.4	25.4	34 10.31	— 0.01	12.62	1 34 22.92	13.96
	O. Arg. S'. 1049	25	27.5	29.7	31.1	41.9	42.9	44.4	45.6	46.7	57.6	58.9	1.4	38 44.34	0.04	12.62	1 38 56.92	12.50
	O. Arg. S. 1052	26	..	..	..	16.8	18.1	20.4	37.5	40.2	41.5	42.9	44.4	39 32.72	29.27	12.62	1 39 16.07	12.50
8	Sun I	27	15.2	17.2	18.7	29.0	30.2	31.4	32.7	33.8	44.2	45.4	47.8	58 31.42	0.09	12.53	16 58 43.86	..
R.	Sun II	28	..	..	..	50.6	51.5	52.9	54.2	55.3	5.7	7.0	9.3	0 58.31	5.48	12.53	7 1 5.36	..
	α Lyræ	29	..	..	..	21.3	22.8	25.4	44.8	47.9	49.5	51.1	53.0	32 39.48	— 33.18	12.52	18 32 18.82	6.96
	α Aquilæ	30	40.8	42.8	44.1	53.6	54.7	55.9	57.0	58.2	7.8	9.0	11.0	43 55.90	+ 0.02	12.52	19 44 8.44	11.28
	α Piscis Australis	31	38.4	40.6	42.2	53.0	54.3	55.6	57.0	58.2	9.3	10.8	13.2	49 55.69	— 0.12	12.52	22 50 8.09	13.70
	Lacaille 9336	32	35.7	37.8	39.3	49.5	50.6	51.9	53.3	54.3	4.9	6.1	8.3	53 51.97	0.09	12.52	22 54 4.40	13.39
	Lalande 45473	33	53.0	54.9	56.2	6.3	7.4	8.6	10.0	11.0	21.2	22.5	24.6	7 8.70	0.08	12.52	23 7 21.14	13.26
	γ Piscium	34	40.2	42.1	43.3	52.8	53.8	55.1	56.3	57.3	6.9	8.1	10.2	9 55.10	0.00	12.52	23 10 7.62	13.09
	Lacaille 9462	35	25.9	28.0	29.4	39.7	40.9	42.2	43.4	44.5	55.0	56.2	58.4	16 42.15	0.09	12.52	23 16 54.58	13.28
	B. A. C. 8167	36	57.1	59.0	0.4	10.8	11.9	13.1	14.4	15.6	26.1	27.3	29.5	19 13.20	0.09	12 52	23 19 25.65	13.27
	O. Arg. S. 22897	37	30.8	32.8	34.9	44.4	45.4	46.6	47.9	49.0	59.4	0.7	2.8	25 46.79	0.08	12.52	23 25 59.23	13.23
	O. Arg. S. 22911	38	2.9	4.9	6.2	16.3	17.3	18.4	19.6	20.7	30.9	32.2	34.3	27 18.52	0.07	12.52	23 27 30.97	13.20
	Lacaille 9606	39	55.7	57.8	59.2	9.3	10.4	11.7	13.0	14.1	24.6	25.9	28.0	42 11.79	0.09	12.52	23 42 24.22	13.18
	B. A. C. 8304	40	50.6	52.8	54.1	4.6	5.6	6.9	8.3	9.4	20.0	21.4	23.6	46 7.03	0.10	12.52	23 46 19.45	13.17
	Lacaille 9655	41	1.2	3.3	4.8	15.1	16.4	17.6	18.9	20.1	30.9	32.3	34 4	49 17.73	— 0.10	12.52	23 49 30.15	13.15
	ω Piscium	42	53.0	55.1	56.3	5.9	6.9	8.1	9.1	10.3	19.9	21.2	23.2	52 8.09	+ 0.01	12.52	23 52 20.62	13.26
	Lacaille 9702	43	44.0	46.0	47.6	58.1	59.2	0.5	1.9	3.0	13.5	14.9	17.1	56 0.53	— 0.10	12.52	23 56 12.95	13.12
	Lacaille 9724	44	24.5	26.7	28.0	38.2	39.4	40.7	41.9	43.1	53.6	55.1	57.2	59 40.76	0.09	12.52	23 59 53.19	13.11
	Lacaille 9747	45	35.0	37.2	38.5	49.1	50.2	51.6	53.0	54.1	5.0	6.2	8.4	2 51.66	0.10	12.52	0 3 4.08	13.07
	Weisse 88	46	35.5	37.4	38.7	48.1	49.1	50.3	51.6	52.6	2.3	3.4	5.4	5 50.40	— 0.01	12.52	0 6 2.91	13.30
	Neptune	47	..	..	..	15.7	16.8	17.9	19.1	20.1	..	..	..	14 17.92	+ 0.04	12.52	0 14 30.48	..
	Polaris	48	..	..	..	..	..	..	20 0	56.0	44.0	40.0	31.0	32 38.20	— 22 46.67	12.52	1 10 4.05	121.69
	Lacaille 513	49	15.4	17.8	19.2	30.1	31.0	32.2	33.6	34.9	45.8	47.1	49.3	39 32.40	— 0.06	12.52	1 39 44.86	12.44
	β Arietis	50	41.3	43.2	44.8	54.6	55.8	57.2	58.4	59.6	9.7	11.2	13.2	46 57.18	+ 0.02	12.52	1 47 9.72	14.94
	O. Arg. S. 1219	51	38.3	40.6	41.9	52.7	53.9	..	56.2	57.0	7.7	8.9	11.1	52 54.83	— 0.05	12.52	1 53 7.30	12.57
	Lacaille 638	52	32.3	34.5	35.7	46.7	47.8	49.1	50.4	51.7	2.6	4.0	6.2	1 49.18	— 0.06	12.52	2 2 1.64	12.28
	Lalande 4070	53	54.7	56.6	58.1	8.3	9.3	10.4	11.6	12.6	23.0	24.3	26.4	5 10.48	+ 0.02	12.52	2 5 23.02	15.07
ec. 9	Neptune	54	1.4	3.3	4.6	14.0	15.0	16.2	17.4	18.4	28.0	29.3	31.3	14 16.26	— 0.38	13.61	0 14 29.49	..
Y.	Lacaille 83	55	27.5	29.7	31.1	41.8	43.0	44.5	45.8	47.0	58.0	59.2	1.5	18 44.46	— 0.50	+13.60	0 18 57.56	— 12.94

23. Unsteady.

December 8. Image $0^{r}.00$. Clamp east.

December 8, 16h. to 0h. n. = + $0^{s}.190$.
0h. to 3h. + 0.092.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Dec. 8, 22.3	+ 12.52	— 0.001	— 0.010

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'nto 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	IX.	Mean.	Inst.	Clock.		
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Dec. 9	12 Ceti	1	38.7	40.7	41.9	51.5	52.5	53.6	54.8	55.8	5.5	6.7	8.8	22 53.68	— 0.39	+13.59	0 23 6.88	— 13.28
Y.	Santini 30	2	28.0	30.0	31.3	40.7	41.8	43.0	44.2	45.2	54.9	56.0	58.1	26 43.02	0.38	13.59	0 26 56.23	13.43
	* 127 W. + 2° 33′	3	11.2	13.2	14.4	24.0	25.0	26.1	27.2	28.2	38.0	39.2	41.1	28 26.15	0.38	13.59	0 28 39.36	13.44
	B. A. C. 167	4	. .	. .	. .	6.6	7.7	9.8	25.0	27.4	28.6	29.8	31.3	32 20.78	26.42	13.58	0 32 7.94	13.46
	60 Piscium	†5	. .	. .	. .	7.4	8.4	9.7	10.9	11.9	21.6	22.8	24.8	40 14.69	5.35	13.57	0 40 22.91	13.60
	Weisse 749	6	25.1	27.0	28.2	37.9	38.9	40.0	41.2	42.3	52.1	53.3	55.4	43 40.13	0.37	13.57	0 43 53.33	13.64
	Weisse 788	7	13.3	15.2	16.4	26.1	27.1	28.2	29.5	30.5	40.1	41.4	43.5	45 28.30	0.37	13.56	0 45 41.49	13.67
	Lacaille 257	8	. .	. .	. .	12.1	13.5	15.8	33.7	35.3	36.6	38.2	39.5	50 28.09	29.46	13.56	0 50 12.19	12.80
	70 Piscium	9	. .	. .	. .	48.5	49.5	50.8	51.9	52.9	. .	. .	. .	54 50.72	0.32	13.55	0 55 3.95	13.75
	ε Piscium	10	26.4	28.3	29.6	39.1	40.2	41.4	42.6	43.7	53.5	54.6	56.5	55 41.45	0.37	13.55	0 55 54.63	13.75
	Polaris	11	55.0	12.0	2.0	29.5	10.0	56.5	46.0	29.0	1.5	51.0	12.0	10 0.41	10.41	13.53	1 10 3.53	121.16
	Lacaille 453	12	. .	. .	. .	. .	. .	. .	26.8	29.6	30.9	32.4	34.0	28 30.74	38.96	13.51	1 28 5.29	12.46
	ν Piscium	†13	54.8	56.7	57.9	7.5	8.5	9.8	11.0	12.0	21.6	22.8	24.8	34 9.76	0.37	13.50	1 34 22.89	13.94
	Weisse 667	14	41.5	43.6	45.0	54.7	55.8	56.8	58.0	59.2	9.1	10.3	12.4	36 56.96	0.36	13.50	1 37 10.09	14.40
	Weisse 721	15	7.1	9.2	10.4	20.3	21.3	22.5	23.7	24.7	34.7	36.0	38.0	40 22.54	0.36	13.50	1 40 35.68	14.47
	Lalande 3344	16	20.3	22.4	23.6	33.4	34.5	35.6	36.8	37.9	47.9	49.0	51.2	42 35.69	0.36	13.49	1 42 48.82	14.48
	Weisse 807	17	. .	. .	. .	30.6	31.7	32.9	34.1	35.2	. .	. .	. .	45 32.90	0.31	13.49	1 45 46.08	14.53
	O. Arg. S. 1179	18	31.7	34.0	35.2	. .	. .	. .	. .	. .	1.5	2.9	5.0	49 48.29	0.53	13.48	1 50 1.24	12.48
	Lacaille 639	19	19.7	21.8	23.3	33.6	34.6	36.0	37.3	38.4	49.0	50.2	52.3	2 36.02	0.47	13.47	2 2 49.02	12.55
	O. Arg. S. 1376	20	39.2	41.3	42.6	52.7	53.7	54.9	56.2	57.3	7.4	8.7	10.9	4 54.99	0.45	13.47	2 5 8.01	12.85
	O. Arg. S. 1384	21	. .	. .	. .	23.8	24.8	26.0	27.2	28.3	38.6	39.7	41.9	5 31.29	5.67	13.46	2 5 39.08	12.85
	O. Arg. S. 1424	22	. .	. .	. .	46.9	48.0	49.3	50.6	51.8	2.3	3.6	5.7	8 54.78	5.89	13.46	2 9 2.35	12.51
	* + 12° 54′	23	48.0	50.0	51.3	1.0	2.1	3.3	4.6	5.5	15.5	16.7	18.8	13 3.35	0.36	13.45	2 13 16.44	14.72
	B. A. C. 743	24	50.9	53.2	54.5	5.3	6.5	7.8	9.0	10.3	21.3	22.5	24.9	17 7.84	0.50	13.45	2 17 20.79	12.23
	Lacaille 727	25	41.8	44.1	45.4	55.7	56.7	58.0	59.3	0.3	10.9	12.2	14.4	18 58.07	0.47	13.45	2 19 11.05	12.57
	Lacaille 750	26	23.9	26.0	27.2	37.6	38.8	40.1	41.5	42.6	53.0	54.4	56.7	22 40.16	0.47	13.44	2 22 53.13	12.46
	Lacaille 772	27	0.7	2.9	4.3	15.1	16.2	17.6	18.9	20.0	31.0	32.5	34.5	26 17.58	0.50	13.44	2 26 30.52	12.18
	O. Arg. S. 1664	28	15.1	17.4	18.8	29.5	30.6	31.9	33.3	34.5	45.3	46.6	48.9	29 31.99	0.50	13.43	2 29 44.92	12.19
	γ Ceti	†29	49.1	51.0	52.2	1.9	2.9	4.0	5.3	6.2	16.0	17.0	19.2	36 4.07	0.38	13.42	2 36 17.11	14.17
	Lacaille 873	30	36.0	38.2	39.6	49.8	50.9	52.3	53.6	54.7	5.1	6.4	8.6	40 52.29	0.38	13.42	2 41 5.33	12.45
	O. Arg. S. 1838	31	55.9	58.0	59.2	9.2	10.2	11.5	12.8	13.8	24.0	25.2	27.4	43 11.56	0.44	13.42	2 43 24.54	12.81
	* — 31° 25′	32	54.5	56.6	. .	9.4	10.6	11.9	. .	. .	. .	. .	. .	0 4.60	6.85	13.32	4 0 24.77	11.37
	O. Arg. S. 2997	33	38.3	40.5	41.8	52.9	54.1	55.4	56.7	57.8	9.0	10.3	12.6	13 55.40	0.51	13.30	4 14 8.19	11.55
	Lacaille 1433	34	30.6	33.0	34.4	46.1	47.4	48.9	50.4	51.6	3.2	4.8	7.3	16 48.88	0.56	13 30	4 17 1.62	10.87
	ε Tauri	35	14.2	16.3	17.6	27.7	28.7	29.9	31.3	32.3	42.5	43.7	46.0	20 30.02	0.36	13.30	4 20 42.96	16.18
	Lalande 8587	36	36.2	38.4	39.7	50.0	51.2	52.5	53.7	55.0	5.5	6.8	8.9	24 52.54	0.47	13.29	4 25 5.36	12.08
	* + 21° 55′	37	31.5	33.7	35.0	45.4	46.4	47.7	48.9	50.0	0.5	1.8	4.0	28 47.72	0.36	13.28	4 29 0.64	16.54
	B. Z. 393, 103	38	48.7	50.7	51.9	2.4	3.4	4.7	6.0	7.2	17.6	18.9	21.0	33 4.77	0.36	13.28	4 33 17.69	16.62
	B. Z. 393, 105	39	. .	. .	. .	36.8	38.3	40.4	56.6	59.2	0.6	2.1	3.5	33 52.19	28.51	13.28	4 33 36.96	16.62
	μ Eridani	40	16.3	18.2	19.5	29.1	30.0	31.2	32.3	33.4	43.3	44.4	46.4	38 31.28	— 0.39	13.27	4 38 44.16	14.00
	Polaris, S. P.	41	29.0	49.5	1.5	12.0	28.5	. .	28.5	50.0	0.0	8.5	14.5	58 34.20	+ 11 19.24	12.68	1 10 6.12	120.88
	β Libræ	42	13.2	15.2	16.5	26.2	27.2	28.3	29.5	30.4	40.3	41.5	43.7	9 28.36	. .	. .	. . . .	. .
R.	α Cor. Borealis	43	25.3	27.6	29.0	39.6	40.9	42.2	43.5	44.7	. .	. .	. .	28 36.60	+ 5.68	12.62	5 28 54.90	— 9.24
10	Sun I	†44	2.3	4.4	5.5	16.2	17.2	18.3	19.5	20.7	31.6	32.7	35.0	7 18.49	— 0.09	12.58	17 7 30.98	+ 70.88
	δ Ursæ Minoris	45	20.0	51.0	13.5	54.0	13.0	31.5	51.5	9.0	54.0	13.0	48.0	15 32.59	+ 2.81	12.55	18 15 47.95	+ 103.41
	α Lyræ	46	46.9	49.6	51.2	3.3	4.6	6.2	7.7	9.0	21.3	22.8	25.6	32 6.20	0.13	12.54	18 32 18.87	— 6.95
	α Aquilæ	47	40.8	42.7	43.9	53.6	54.5	55.8	56.9	58.1	7.8	8.8	11.1	43 55.82	+ 0.02	12.51	19 44 8.35	11.28
	γ Piscium	48	40.3	42.0	43.3	52.9	53.9	55.0	56.3	57.3	7.0	8.0	10.0	9 55.09	— 0.01	12.42	23 10 7.50	13.07
	Lacaille 9436	49	6.5	8.7	10.1	21.2	22.2	23.6	24.9	26.2	37.1	38.5	40.8	11 23.62	+ 0.04	12.42	23 11 36.08	13.39
	Lacaille 9447	50	. .	. .	. .	35.6	36.4	37.6	38.9	40.1	. .	. .	. .	12 37.72	0.08	12.42	23 12 50.22	13.28
	B. A. C. 8145	51	19.8	22.3	24.1	37.1	38.3	40.0	41.3	42.9	55.7	57.6	59.3	15 39.85	+ 0.08	12.42	23 15 52.35	13.61
	Lacaille 9462	52	. .	. .	. .	55.0	56.1	58.1	14.8	17.2	18.7	20.1	21.5	17 10.19	— 28.14	12.42	23 16 54.47	13.25
	B. A. C. 8167	53	57.0	59.3	0.6	10.8	11.9	13.2	14.5	15.7	26.2	27.5	29.5	19 13.29	+ 0.03	12.42	23 19 25.74	13.24
	Lacaille 9497	54	38.9	40.8	42.1	52.4	53.4	54.8	56.0	57.1	7.8	8.9	11.3	22 54.86	0.03	12.41	23 23 7.30	13.23
	Lacaille 9508	55	17.2	19.4	21.0	31.5	32.6	33.8	35.2	36.3	47.2	48.6	50.8	24 33.96	+ 0.04	+12.41	23 24 46.41	— 13.26

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	c
	h.	s.	s.	s.
Dec. 9,	2.4	+ 13.44	— 0.076	— 0.382
10	21.2	+ 12.47	— 0.026	— 0.010

5. Saw no companion. 13. Steady. 29. Saw no other star.

44. Flaming and unsteady; second limb lost by failure of chronograph.

December 9, 17h. 30m. Took out the object glass and cleaned it of condensed moisture after separating the glasses. Removed from pendulum one and one-half ounces of mercury. Observations made with the Howard and Davis clock.

December 9, 4h. 45m. Image west $\overset{r.}{0.44}$. Clamp east.
Image east 0.41. Clamp west.

At 5h. reduced the collimation.

December 9, 5h. 15m. Image west 0.03. Clamp west.
Image east 0.02. Clamp east.

December 10, 1h. 30m. Image west 0.05. Clamp east.

Night unfavorable. Stars faint, distorted, and unsteady.

December 9 . . . . . n. = + $\overset{s.}{0.126}$.

December 9–10, 12h. to 20h. n. = + $\overset{s.}{0.177}$. December 10, 23h. to 2h. n. = — $\overset{s.}{0.100}$.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
. 10	Lacaille 9519	1	22.2	24.4	25.9	36.4	37.6	38.9	40.2	41.2	52.1	53.3	55.4	26 38.87	+ 0.04	+12.41	23 26 51.32	— 13.24
	Lacaille 9527	2	0.7	2.8	4.1	15.0	16.2	17.5	18.8	20.0	31.1	32.4	34.8	28 17.58	0.04	12.41	23 28 30.03	13.26
	Lacaille 9532	3	- -	- -	- -	18.2	19.1	20.5	21.9	23.1	- -	- -	- -	29 20.56	+ 0.09	12.41	23 29 33.06	13.23
R.	ι Piscium	4	- -	- -	- -	43.6	44.6	45.7	46.9	48.0	57.8	59.0	0.8	32 50.80	— 4.99	12.41	23 32 58.22	13.16
	Lacaille 9555	5	- -	- -	- -	46.6	47.8	49.3	50.5	51.6	2.0	3.4	5.5	33 54.59	— 5.42	12.41	23 34 1.58	13.20
	Lacaille 9576	6	14.0	16.2	18.0	29.4	30.6	32.0	33.4	34.7	46.3	47.7	50.2	36 32.05	+ 0.06	12.41	23 36 44.52	13.24
	B. A. C. 8260	7	47.6	50.4	52.0	5.0	6.3	7.8	9.4	10.8	23.9	25.5	28.3	39 7.91	0.08	12.41	23 39 20.40	13.27
	Lacaille 9606	8	55.6	57.7	59.1	9.4	10.5	11.7	13.0	14.1	24.5	25.8	28.2	42 11.78	0.03	12.40	23 42 24.21	13.15
	B. A. C. 8304	9	50.7	52.8	54.0	4.6	5.6	6.9	8.2	9.5	20.1	21.4	23.4	46 7.02	+ 0.04	12.40	23 46 19.46	13.14
	ω Piscium	10	53.4	55.4	56.5	6.0	7.0	8.3	9.6	10.6	20.2	21.3	23.4	52 8.34	— 0.02	12.40	23 52 20.72	13.23
	Lacaille 9695	11	54.2	56.3	57.7	8.6	9.7	11.1	12.4	13.6	24.9	26.1	28.6	54 11.20	+ 0.04	12.40	23 54 23.64	13.08
	Lacaille 9702	12	44.3	46.2	47.6	58.3	59.3	0.4	1.8	3.0	13.6	15.1	17.3	56 0.63	+ 0.04	12.40	23 56 13.07	13.09
	α Andromedæ	13	53.7	55.9	57.0	8.0	9.4	10.6	12.1	13.1	24.0	25.2	27.6	1 10.60	— 0.07	12.40	0 1 22.93	13.51
	Neptune	†14	1.7	3.5	4.9	14.4	15.4	16.8	17.9	19.0	28.4	29.7	31.7	14 16.67	0.01	12.39	0 14 29.05	- -
	Polaris	†15	- -	- -	- -	22.0	5.0	58.0	48.0	27.0	- -	- -	- -	9 56.00	— 2.54	12.37	1 10 5.83	120.60
	θ Ceti	†16	47.8	49.6	50.7	0.5	1.4	2.9	4.1	5.1	14.8	16.0	17.9	17 2.80	+ 0.01	12.36	1 17 15.17	13.29
13	α Coronæ Borealis	†17	- -	- -	- -	- -	- -	- -	25.0	27.6	29.0	30.5	32.0	29 28.82	— 37.81	3.94	15 28 54.95	9.32
Y.	α Serpentis	18	14.6	16.7	18.0	27.5	28.5	29.7	30.9	31.9	41.5	42.9	45.0	37 29.75	0.00	3.94	15 37 33.69	11.27
14	Sun I	19	50.2	52.3	53.7	4.0	5.2	6.6	7.8	8.9	19.4	20.6	22.9	25 6.51	0.04	3.83	17 25 10.30	- -
	Sun II	20	12.5	14.5	15.9	26.3	27.4	28.6	30.0	31.1	41.5	42.8	45.1	27 28.70	— 0.04	3.83	17 27 32.49	- -
	α Lyræ	21	56.0	58.4	0.1	12.2	13.6	15.1	16.6	17.9	30.3	31.9	34.3	32 15.13	+ 0.03	3.77	18 32 18.93	6.95
	Weisse 375	22	12.6	14.7	15.9	25.5	26.5	27.7	28.9	29.9	39.6	40.8	42.9	23 27.73	— 0.02	3.42	0 23 31.13	13.44
	Weisse 453	23	0.3	2.3	3.4	13.2	14.1	15.2	16.4	17.4	27.4	28.4	30.5	27 15.33	0.02	3.42	0 27 18.73	13.48
	B. A. C. 167	24	49.5	51.5	52.7	2.2	3.3	4.4	5.6	6.6	16.3	17.4	19.5	32 4.45	— 0.01	3.41	0 32 7.85	13.41
	β Ceti	†25	27.5	29.6	30.8	40.8	42.0	43.2	44.4	45.4	55.8	57.0	59.0	36 43.23	+ 0.01	3.41	0 36 46.65	13.04
	Lacaille 218	†26	58.6	0.7	1.9	12.2	13.4	14.7	15.9	16.9	27.5	28.6	30.9	41 14.66	+ 0.01	3.40	0 41 18.07	12.87
	O. Arg. S. 506	27	- -	- -	- -	22.9	24.0	25.2	26.5	27.5	37.8	39.0	41.2	48 30.51	— 5.19	3.39	0 48 28.71	12.98
	O. Arg. S. 542	†28	21.8	24.1	25.5	36.1	37.3	38.5	39.9	41.1	52.0	53.4	55.8	51 38.68	+ 0.02	3.39	0 51 42.09:	12.67
	ε Piscium	29	36.0	38.1	39.4	48.7	49.8	51.1	52.3	53.3	3.0	4.1	6.2	55 51.09	— 0.02	3.39	0 55 54.46	13.70
	Polaris	†30	54.0	12.5	1.5	26.0	9.0	56.0	44.0	26.0	0.0	49.0	12.0	9 59.09	2.64	3.37	1 9 59.82	117.59
	η Piscium	31	- -	- -	- -	8.4	9.4	10.6	11.8	12.8	23.0	24.1	26.3	24 15.80	5.14	3.36	1 24 14.02	14.29
	Weisse 450	32	- -	- -	- -	51.3	52.3	54.2	9.6	11.9	13.1	14.4	15.8	27 5.32	— 26.05	3.36	1 26 42.63	13.55
	O. Arg. S. 992	33	9.5	11.5	12.9	23.3	24.5	25.8	27.0	28.1	38.7	40.0	42.1	33 25.76	+ 0.01	3.35	1 33 29.12	12.62
	Weisse 667	34	51.2	53.3	54.5	4.3	5.2	6.6	7.8	8.8	18.7	19.9	22.0	37 6.57	— 0.02	3.35	1 37 9.90	14.37
	Weisse 74	35	16.8	18.9	20.1	29.9	30.8	32.1	33.3	34.4	44.4	45.6	47.7	40 32.18	0.02	3.34	1 40 35.50	14.43
	Lalande 3344	36	29.9	32.0	33.2	43.1	44.0	45.3	46.4	47.6	57.5	58.7	0.9	42 45.33	0.02	3.34	1 42 48.65	14.44
	ξ^1 Ceti	37	30.9	32.9	34.1	43.9	44.9	46.0	47.2	48.3	57.9	59.1	1.2	5 46.04	0.02	3.32	2 5 49.34	14.32
	Venus II	38	- -	- -	- -	26.9	28.2	30.3	45.8	48.2	49.3	50.5	52.0	20 41.40	26.53	2.51	14 20 17.38	0.81
15	Sun I	†39	17.4	19.3	20.9	31.1	32.1	33.5	34.6	35.8	46.7	48.0	50.0	29 33.58	0.03	2.39	17 29 35.94	- -
L.	Sun II	40	39.6	41.6	43.0	53.5	54.5	55.8	57.0	58.4	8.8	10.1	12.3	31 55.87	— 0.03	2.39	17 31 58.23	- -
	α Lyræ	41	57.3	59.9	1.4	13.6	14.9	16.5	18.0	19.3	31.6	33.2	35.6	32 16.48	+ 0.03	2.35	18 32 18.86	6.94
	α Aquilæ	42	50.9	52.9	54.2	3.8	4.8	6.0	7.2	8.2	18.1	19.2	21.2	44 6.05	0.00	2.30	19 44 8.35	11.26
	α Cygni	43	23.6	26.5	28.3	41.7	43.0	44.6	46.4	47.9	1.5	3.0	6.0	36 44.77	+ 0.04	2.27	20 36 47.08	7.53
	β Aquarii	44	6.6	8.7	9.9	19.3	20.4	21.6	22.8	23.8	33.6	34.7	36.9	24 21.66	— 0.02	2.24	21 24 23.88	12.65
	β Cephei	45	6.3	12.0	15.1	43.4	46.3	49.8	53.4	56.6	24.7	28.2	33.9	26 49.97	+ 0.11	2.24	21 26 52.32	2.07
	α Aquarii	46	30.9	32.8	34.1	43.5	44.5	45.7	46.8	47.9	57.6	58.7	0.8	58 45.75	— 0.01	2.22	21 58 47.96	12.51
	Moon I	47	4.3	6.3	7.6	17.3	18.4	19.6	20.8	22.0	31.8	33.1	35.1	10 19.66	0.02	2.21	22 10 21.85	- -
	Polaris	†48	- -	- -	- -	- -	- -	-	28.0	4.0	54.0	46.0	41.0	32 46.60	22 48.82	2.08	1 9 59.86	116.73
	Lacaille 639	49	- -	- -	- -	44.6	45.7	47.2	48.3	49.4	- -	- -	- -	2 47.04	0.02	2.06	2 2 49.12	12.50
	67 Ceti	50	56.7	58.5	59.7	9.2	10.2	11.6	12.7	13.9	23.6	24.6	26.7	10 11.58	— 0.02	2.06	2 10 13.62	13.49
Y.	α Bootis	51	9.7	11.8	13.2	23.3	24.3	25.6	26.8	27.9	38.2	39.4	41.5	9 25.61	+ 0.02	1.65	14 9 27.28	10.62
	Venus II	52	7.3	9.2	10.5	20.3	21.4	22.6	23.7	24.7	34.7	35.7	37.8	24 22.54	— 0.03	1.64	14 24 24.15	0.80
	α Coronæ Borealis	53	36.5	38.8	40.2	50.9	52.0	53.4	54.7	55.8	6.7	8.0	10.3	28 53.39	+ 0.04	1.61	15 28 55.04	9.37
	α Serpentis	54	17.1	19.0	20.3	29.8	30.8	32.1	33.3	34.3	44.0	45.2	47.2	37 32.10	0.00	1.61	15 37 33.71	— 11.32
16	Sun I	†55	44.1	46.1	47.6	58.0	59.2	0.5	1.9	2.8	13.4	14.8	16.8	34 0.47	— 0.05	1.54	17 34 1.96	- -
	SnP II	†56	6.4	8.5	9.7	20.2	21.1	22.6	23.8	25.0	35.5	36.7	39.0	36 22.59	— 0.05	+ 1.54	17 36 24.08	- -

14. Very faint. 15. Very unsteady.
16. Not used for clock error.
17. Commenced using the Parkinson and Frodsham clock.
25. Very much blurred.
26. Blurred. 28. Blurred.
30. Blurred and unsteady.
39. Not well defined.
48. Very unsteady.
55. Faint; under a cloud.
56. Faint. r.
December 14, 2h. 20m. Image west 0.08. Clamp east.
Stars very faint and much blurred. s.
December 13–14, 15h. to 19h. n. = + 0.055.
14, 0h. to 3h. — 0.055.
14–15, ... + 0.050.
15–22, ... + 0.100.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Dec. 14, 21.5	+ 3.59	— 0.059	— 0.010
15, 21.6	2.23	0.038	. .
16, 20.3	+ 1.45	— 0.033	— 0.010

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1860.0.
1863.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Dec. 16	α Pegasi	1	43.0	45.0	46.1	56.1	57.0	58.4	59.6	0.6	10.6	11.9	14.0	57 58.39	+ 0.02	+ 1.36	22 57 59.77	— 12.49
Y.	Moon I	2	49.0	51.0	52.4	2.0	3.0	4.2	5.4	6.5	16.4	17.7	19.8	5 4.31	— 0.01	1.36	23 5 5.66	. .
	γ Piscium	3	51.3	53.2	54.4	3.8	4.8	6.1	7.3	8.3	18.0	19.3	21.3	10 6.16	0.01	1.35	23 10 7.50	13.00
	ψ^3 Aquarii	4	37.0	39.1	40.2	49.9	51.0	52.2	53.4	54.6	4.3	5.5	7.5	11 52.25	— 0.03	1.35	23 11 53.57	13.01
	Polaris	†5	29.0	28.0	16.0	5.0	39.0	47.5	8.5	57.0	. .	. .	-	52 28.75	+ 17 28.88	1.30	1 9 58.93	115.89
	θ Ceti	†6	58.4	0.3	1.6	11.4	12.3	13.4	14.7	15.7	25.5	26.8	28.7	17 13.53	— 0.03	1.29	1 17 14.79	13.23
	η Piscium	7	57.3	59.3	0.6	10.4	11.5	12.8	14.0	15.0	25.0	26.3	28.3	24 12.77	+ 0.02	+ 1.28	1 24 14.07	14.28
19	Sun I	†8	6.4	8.4	9.8	20.2	21.5	22.6	23.8	24.7	35.4	36.7	39.1	47 22.60	— 0.04	. .	. . . .	. .
R.	Sun II	†9	. .	. .	. .	42.7	43.8	45.1	46.4	47.6	58.1	59.6	1.7	49 50.62	— 5.46	. .	. . . .	. .
	Moon I	†10	10.5	12.5	13.9	23.8	25.0	26.2	27.6	28.6	38.5	39.9	42.0	44 26.23	+ 0.02	— 2.51	1 44 23.74	.
	α Arietis	†11	18.9	20.9	22.2	32.5	33.6	35.0	36.3	37.4	47.8	49.2	51.2	59 35.00	0.04	2.52	1 59 32.52	15.24
20	ξ^2 Ceti	12	46.0	48.1	49.1	58.7	59.6	1.0	2.6	3.3	12.9	14.1	16.1	21 0.99	+ 0.01	3.46	2 20 57.54	14.39
Y.	Venus II	13	10.6	12.8	14.2	23.9	24.9	26.0	27.2	28.4	38.4	39.6	41.7	45 26.15	— 0.02	3.82	14 45 22.31	0.76
	α Cor. Borealis	14	41.9	44.2	45.8	56.4	57.6	58.9	0.3	1.4	12.1	13.6	15.7	28 58.90	+ 0.05	3.84	15 28 55.11	9.48
	α Serpentis	15	22.6	24.6	25.9	35.4	36.5	37.7	38.9	40.0	49.7	50.9	52.9	37 37.74	0.01	— 3.84	15 37 33.91	11.43
22	α Cor. Borealis	16	29.5	31.6	33.0	43.6	44.8	46.1	47.4	48.7	59.7	0.8	3.1	28 46.21	+ 0.05	+ 8.93	15 28 55.19	9.53
23	i Tauri	17	2.0	4.0	5.4	15.4	16.5	17.7	18.8	20.1	30.3	31.6	33.7	43 17.77	— 0.05	9.73	4 43 27.45	16.31
	ι Aurigæ	18	43.7	45.9	47.5	58.8	59.8	1.4	2.7	4.0	. .	. .	. .	47 55.48	+ 5.83	9.73	4 48 11.04	18.23
	ε Leporis	19	18.3	20.6	21.8	32.3	33.3	34.5	35.9	37.0	47.3	48.6	50.8	59 34.58	+ 0.07	9.74	4 59 44.39	12.19
	n Tauri	20	43.2	45.4	46.5	56.8	57.9	59.1	0.3	1.6	11.8	13.2	15.3	10 59.19	— 0.07	9.74	5 11 8.86	16.82
	B. Z. 513, 24	21	3.4	5.0	6.3	7.5	10.4	. .	20.2	22.9	24.3	25.9	27.3	16 45.32	0.39	9.74	5 16 54.67	18.01
	B. Z. 513, 25	22	29.8	31.8	33.3	44.5	45.7	47.0	48.4	49.6	0.8	2.1	4.6	16 47.05	0.10	9.74	5 16 56.69	18.01
	Moon I	23	56.8	58.8	0.2	10.6	11.6	12.8	14.1	15.3	25.9	27.3	29.4	22 12.98	— 0.06	9.75	5 22 22.67	. .
	O. Arg. S. 4282	24	14.4	16.4	17.7	. .	. .	. .	. .	. .	43.5	44.7	46.8	39 30.58	+ 0.03	9.75	5 39 40.36	12.08
	Lacaille 1978	25	11.5	13.7	15.0	25.5	26.5	27.9	29.0	30.2	40.6	41.9	44.2	40 27.82	+ 0.07	9.75	5 40 37.64	12.08
	χ^1 Orionis	26	56.6	58.8	0.1	10.1	11.2	12.6	13.8	14.8	25.0	26.4	28.6	46 12.54	— 0.06	9.76	5 46 22.24	16.63
	Lacaille 2062	27	30.6	32.5	33.8	44.4	45.5	46.7	48.0	49.2	59.6	0.9	3.1	50 46.75	+ 0.07	9.76	5 50 56.58	12.14
	χ^4 Orionis	28	27.3	29.5	30.7	41.1	42.1	43.2	44.6	45.7	56.0	57.3	59.5	55 43.37	— 0.06	9.76	5 55 53.07	16.65
	ν Orionis	29	25.6	27.7	29.0	38.8	39.8	41.0	42.2	43.2	53.4	54.6	56.7	59 41.09	0.04	9.76	5 59 50.81	16.03
	Lalande 11684	30	2.7	4.9	6.3	16.9	17.8	19.1	20.5	21.7	32.5	33.8	36.1	2 19.30	0.08	9.76	6 2 28.98	17.41
	Lalande 11714	31	54.5	56.4	57.9	. .	. .	. .	. .	. .	24.3	25.6	27.7	3 11.07	0.12	9.76	6 3 20.71	17.41
	71 Orionis	32	27.6	29.7	31.0	41.0	42.1	43.4	44.6	45.7	56.0	57.2	59.4	6 43.43	0.06	9.77	6 6 53.14	16.54
	B. Z. 511, 63	33	55.6	58.3	0.0	13.2	14.7	16.4	18.0	19.5	33.0	34.6	37.6	12 16.45	— 0.16	9.77	6 12 26.06	— 20.59
	δ Ursæ Minoris, S. P.	34	. .	. .	. .	9.6	54.0	35.0	14.0	56.0	. .	. .	. .	15 33.60	+ 1.98	9.77	18 15 45.35	+ 105.14
	ν Geminorum	35	30.0	32.0	33.3	43.5	44.7	45.8	47.2	48.2	58.5	59.8	1.9	20 45.90	— 0.06	9.77	6 20 55.61	— 16.65
	O. Arg. N. 7032	36	10.7	13.6	15.5	29.8	31.3	33.0	35.0	36.6	50.8	52.7	55.7	26 33.15	0.19	9.77	6 26 42.73	21.44
	γ Geminorum	37	28.4	30.4	31.7	41.7	42.8	43.9	45.2	46.2	56.2	57.5	59.6	29 43.96	0.05	9.77	6 29 53.68	16.20
	51 Cephei	38	. .	. .	. .	23.0	42.0	9.5	32.0	54.0	. .	. .	. .	36 8.10	— 2.45	9.78	6 36 15.43	156.74
	* — 14° 19′	39	50.1	52.3	53.4	3.1	4.3	5.5	6.7	7.8	17.7	19.0	20.9	8 5.53	+ 0.04	9.79	7 8 15.36	13.12
	Weisse 250	40	32.5	34.7	35.8	45.8	46.8	48.0	49.1	50.2	0.3	1.5	3.5	8 48.02	+ 0.04	9.79	7 8 57.85	13.11
	δ Geminorum	41	36.3	38.5	39.7	50.0	51.2	52.4	53.7	54.9	5.3	6.5	8.6	11 52.46	— 0.07	9.79	7 11 2.18	16.68
24	Sun I	†42	6.4	8.9	10.3	20.8	21.9	23.1	24.4	25.5	36.0	37.4	39.5	9 23.11	0.00	10.06	18 9 33.17	. .
R.	Sun II	43	29.1	31.3	32.8	43.2	44.4	45.6	46.8	48.0	58.7	0.0	2.1	11 45.64	0.00	10.06	18 11 55.70	. .
	α Lyræ	44	49.8	52.1	53.9	5.9	7.1	8.9	10.4	11.7	24.0	25.0	28.2	32 8.82	0.00	10.08	18 32 18.90	6.97
	α Aquilæ	45	43.0	45.1	46.3	56.0	57.0	58.0	59.3	0.4	10.0	11.3	13.6	43 58.18	0.00	10.15	19 44 8.33	11.26
	ε Orionis	†46	55.3	57.3	58.5	7.9	8.9	10.1	11.4	12.4	22.0	23.2	25.2	29 10.20	0.00	10.78	5 29 20.98	14.33
	Lacaille 1906	47	. .	. .	. .	50.3	51.6	53.9	11.6	14.4	15.5	17.2	18.7	31 6.65	30.20	10.78	5 30 47.23	11.30
	Lacaille 1918	48	. .	. .	. .	30.9	32.0	33.3	34.7	35.9	46.9	48.0	50.4	32 39.01	— 5.53	10.78	5 32 44.26	11.68
	α Columbæ	49	16.8	19.3	20.7	32.2	33.3	34.7	36.3	37.6	49.0	50.5	53.0	34 34.85	+ 0.06	10.79	5 34 45.70	10.89
	Lacaille 1946	50	. .	. .	. .	39.0	40.1	41.6	42.8	44.0	54.7	56.1	58.5	35 47.10	— 5.49	10.79	5 35 52.40	11.78
	129 Tauri	51	32.1	34.4	35.8	45.7	46.6	47.8	49.2	50.3	0.2	1.4	3.5	38 47.91	— 0.03	10.79	5 38 58.67	16.14
	Lacaille 1978	52	10.3	12.4	13.9	24.3	25.4	26.6	28.1	29.2	39.7	41.0	43.2	40 26.74	+ 0.04	10.79	5 40 37.57	12.08
	Lacaille 1991	53	. .	. .	. .	45.5	46.7	48.0	49.3	50.5	1.3	2.6	4.9	41 53.60	— 5.52	10.80	5 41 58.88	11.70
	B. A. C. 1860	54	47.7	49.9	51.3	1.7	2.8	4.1	5.3	6.5	16.8	18.2	20.6	44 4.08	+ 0.04	+10.80	5 44 14.92	— 12.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Dec. 19, 2.0	— 2.52	— 0.039	0.000
20, 15.5	— 3.84	— 0.029	. .
23, 5.9	+ 9.76	+ 0.025	. .
24, 3.3	+ 10.64	+ 0.064	0.000

5. Steady; under clouds.
6. Set D a little uncertain.
8–9. Both limbs ragged and unsteady.
10. Through clouds.
11. Much distorted.
42. Not well defined.
46. Blurred.

December 23, 6h. 50m. Image $\overset{r.}{0.00}$. Clamp east.
24, 5h. 10m. Image 0.00. Clamp east.

December 23, 4h. to 8h. n. = $\overset{s.}{—0.165}$.

TE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed. R. Ascension.	Reduct'n to 1860.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
63.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
24	χ¹ Orionis	1	55.5	57.5	58.7	9.1	10.0	11.5	12.8	13.9	24.2	25.4	27.4	46 11.45	− 0.03	+10.80	5 46 22.22	− 16.68
	α Orionis	2	. .	. .	. .	38.0	39.0	40.1	41.2	42.2	52.0	53.4	55.4	47 45.16	5.01	10.80	5 47 50.95	15.25
R.	Lacaille 2048 . .	3	. .	. .	. .	17.4	18.6	21.0	38.0	40.6	42.0	43.4	45.0	49 33.25	+ 29.07	10.80	5 49 14.98	11.76
	σ Columbæ . . .	4	47.8	50.0	51.5	2.6	3.7	5.3	6.7	8.0	19.0	20.6	23.2	51 5.31	+ 0.06	10.80	5 51 16.17	11.20
	B. A. C. 1915 . .	5	. .	. .	. .	56.9	58.4	0.8	18.4	21.5	22.8	24.4	25.8	53 13.62	− 30.61	10.81	5 52 53.82	11.15
	χ⁴ Orionis	6	26.4	28.5	29.8	39.8	40.9	42.2	43.4	44.5	54.8	56.1	58.4	55 42.25	0.03	10.81	5 55 53.03	16.66
	μ Geminorum . . .	7	19.5	21.4	22.6	33.1	34.2	35.5	36.8	38.1	48.5	49.6	51.8	14 35.55	0.04	10.83	6 14 46.34	16.97
	Moon I	8	. .	. .	. .	1.4	2.4	3.7	5.0	6.2	16.7	18.1	20.1	16 9.20	5.43	10.83	6 16 14.60	. .
	Moon II	9	59.2	1.4	2.8	13.1	14.3	15.6	16.8	17.8	28.4	29.7	32.0	18 15.55	0.03	10.83	6 18 26.35	. .
	ν Geminorum . . .	10	29.0	30.9	32.3	42.4	43.5	44.7	46.0	47.1	57.6	58.8	0.8	20 44.83	0.03	10.83	6 20 55.63	− 16.66
	δ Ursæ Minoris, S. P.	†11	. .	. .	. .	. .	. .	. .	39.5	17.0	58.0	36.0	56.5	24 53.40	9 18.52	10.84	18 15 45.72	+ 105.25
	γ Geminorum . . .	12	27.3	29.3	30.5	40.4	41.6	42.9	44.0	45.0	55.2	56.6	58.6	29 42.85	0.03	10.84	6 29 53.66	− 16.22
	51 Cephei	†13	. .	. .	. .	21.0	40.0	4.5	32.0	53.5	. .	. .	. .	36 6.20	0.93	10.85	6 36 16.12	156.96
	α Canis Majoris . .	14	44.9	46.0	48.3	12.8	14.1	16.2	32.1	34.6	35.9	37.2	38.5	39 16.42	15.95	10.85	6 39 11.32	12.73
25	μ Geminorum . . .	†15	. .	. .	. .	31.6	32.7	34.0	35.3	36.5	47.0	48.0	50.4	14 39.44	− 5.38	12.36	6 14 46.42	− 16.98
	δ Ursæ Minoris, S. P.	†16	45.0	13.5	51.5	. .	. .	. .	. .	. .	13.0	54.5	17.0	15 32.42	+ 1.07	12.36	18 15 45.85	+ 105.31
	Lacaille 2306 . .	17	24.2	26.5	27.8	39.1	40.3	41.6	42.9	44.2	55.8	57.0	59.0	24 41.67	+ 0.01	12.37	6 24 54.05	− 11.32
r.	γ Geminorum . . .	†18	25.9	27.9	29.2	39.0	40.0	41.3	42.5	43.6	53.8	54.8	56.9	29 41.35	− 0.01	12.37	6 29 53.71	16.23
	51 Cephei	19	. .	. .	. .	18.0	38.5	4.0	28.5	49.5	. .	. .	. .	36 3.70	+ 0.48	12.37	6 36 16.55	157.16
	* 79 W. + 22° 35′ .	20	. .	. .	. .	21.7	22.9	24.1	25.5	26.6	37.0	38.4	40.5	1 29.59	− 5.38	12.39	7 1 36.60	16.83
	* − 30° 25′ . . .	21	47.9	50.3	51.7	2.7	3.9	5.2	6.7	7.8	18.9	20.3	22.8	5 5.29	+ 0.01	12.39	7 5 17.69	11.51
	Moon II . . .	22	15.7	18.1	19.3	29.4	30.6	31.8	33.0	34.3	44.8	45.9	48.2	10 31.92	− 0.01	12.40	7 10 44.31	. .
	δ Geminorum . . .	23	33.7	35.9	37.2	47.6	48.5	49.8	51.1	52.3	2.6	3.9	6.0	11 49.87	0.01	12.40	7 12 2.26	16.73
	Weisse 551 . . .	24	32.6	34.7	36.0	45.5	46.6	47.8	48.9	50.0	59.9	1.0	3.0	18 47.82	0.00	12.40	7 19 0.22	15.49
	68 Geminorum . . .	25	25.0	27.0	28.3	38.4	39.4	40.5	41.7	42.9	52.9	54.1	56.3	25 40.59	0.01	12.41	7 25 52.99	15.98
	α Canis Minoris . .	26	45.7	47.7	48.9	58.7	59.7	0.8	1.8	2.8	12.8	13.9	15.9	32 0.79	0.00	12.41	7 32 13.20	14.74
	g Geminorum . . .	27	49.0	51.2	52.3	2.6	3.5	4.7	5.9	7.0	17.4	18.7	20.6	38 4.81	0.01	12.41	7 38 17.21	16.20
	φ Geminorum . . .	28	43.3	45.4	46.8	57.6	58.6	59.9	1.2	2.5	13.5	14.6	17.1	45 0.05	− 0.01	12.42	7 45 12.47	17.08
R.	α Herculis . . .	29	58.0	0.2	1.5	11.1	12.3	13.5	14.7	15.8	25.7	27.0	29.0	8 13.53	+ 0.03	12.71	17 8 26.27	10.32
26	Sun I	30	57.3	59.2	0.6	10.9	11.9	13.4	14.8	. .	26.4	27.6	29.9	18 13.20	+ 0.20	12.76	18 18 26.16	. .
	Sun II	31	19.4	21.5	23.0	33.4	34.5	35.7	37.0	38.1	48.7	49.9	52.2	20 35.76	− 0.04	12.76	18 20 48.48	. .
	α Lyræ	32	46.6	49.4	51.0	3.1	4.3	6.0	7.5	8.9	21.1	22.6	25.3	32 5.98	+ 0.08	12.76	18 32 18.82	6.98
	α Aquilæ	33	40.6	42.5	43.8	53.2	54.2	55.5	56.7	57.9	7.5	8.5	10.7	43 55.55	0.01	12.81	19 44 8.37	11.26
29	α Ceti	34	46.0	47.9	49.3	58.8	59.9	1.0	2.2	3.3	13.0	14.1	16.0	55 1.05	0.00	11.04	2 55 12.09	14.24
	Vesta	35	23.6	25.6	26.8	36.5	37.5	38.6	39.8	40.9	50.9	52.1	54.2	3 38.77	0.00	11.03	3 3 49.80	. .
	4 Sextantis . . .	36	1.4	3.4	4.7	14.3	15.2	16.5	17.7	18.7	28.5	29.6	31.7	43 16.52	0.00	10.66	9 43 27.18	14.34
	μ Leonis	37	35.7	37.9	39.6	50.3	51.4	52.6	53.9	54.1	5.8	7.1	9.4	44 52.53	− 0.01	10.66	9 45 3.18	15.54
	Lacaille 4076 . .	38	20.1	22.2	23.9	34.6	35.5	36.9	38.3	39.4	50.2	51.6	53.9	50 36.96	0.01	10.65	9 50 47.60	12.77
	π Leonis	39	. .	. .	. .	50.4	51.3	52.5	53.6	54.9	4.6	5.6	7.7	52 57.58	− 5.01	10.63	9 53 3.20	14.35
	Moon II	40	28.8	30.5	31.9	41.5	42.7	43.9	45.1	46.0	56.2	57.3	59.2	22 43.92	0.00	10.62	10 22 54.54	. .
	Lacaille 4363 . .	41	48.4	50.6	51.9	2.7	3.8	5.3	6.5	7.5	18.7	20.0	22.3	30 5.25	+ 0.01	10.61	10 30 15.87	12.97
	34 Sextantis . . .	42	11.9	13.8	15.1	24.8	25.8	27.1	28.3	29.3	38.8	40.0	42.2	35 27.01	0.00	10.61	10 35 37.62	13.96
	37 Sextantis . . .	43	36.5	38.5	39.8	49.1	50.3	51.5	52.8	53.9	3.5	4.7	6.8	38 51.58	0.00	10.60	10 39 2.18	14.02
	l Leonis	44	42.0	44.0	45.4	55.0	56.0	57.2	58.4	59.5	9.3	10.5	12.5	41 57.25	0.00	10.60	10 42 7.85	14.11
	Lacaille 4505 . .	45	2.1	4.6	5.7	16.4	17.5	18.8	20.2	21.3	32.1	33.3	35.5	47 18.86	+ 0.01	10.59	10 47 29.46	13.14
	55 Leonis	46	. .	. .	. .	45.4	46.4	48.4	3.6	6.0	7.1	8.4	9.8	48 59.39	− 26.03	10.59	10 48 43.95	13.80
	α Ursæ Majoris . .	47	37.3	41.4	44.0	4.8	6.6	9.1	11.9	14.3	35.0	37.5	41.9	55 9.44	− 0.05	10.59	10 55 19.98	16.67
	χ Leonis	48	35.9	37.8	39.0	48.5	49.6	50.8	51.9	53.1	2.7	4.0	6.0	57 50.85	0.00	10.58	10 58 1.43	13.78
r.	Venus II . . .	49	23.3	25.3	26.7	36.5	37.6	38.8	40.1	41.1	51.2	52.3	54.5	24 38.85	0.00	10.37	15 24 49.22	0.72
	α Coronæ Borealis .	50	28.2	30.3	31.8	42.5	43.7	45.0	46.4	47.5	58.3	59.4	2.0	28 45.01	+ 0.01	10.36	15 28 55.38	9.71
	α Serpentis . . .	51	8.5	10.5	11.8	21.5	22.5	23.6	24.8	25.9	35.6	36.8	38.9	37 23.67	0.00	10.36	15 37 34.03	11.64
	α Herculis . . .	†52	. .	2.5	3.9	13.7	14.8	16.0	17.3	18.3	28.3	29.5	. .	8 16.03	+ 0.01	10.27	17 8 26.31	10.39
30	Sun I	†53	43.6	45.8	47.2	57.5	58.5	59.7	0.9	2.1	12.8	13.9	16.2	35 59.84	− 0.01	10.18	18 36 10.01	. .
	Sun II	54	5.8	8.0	9.3	19.6	20.7	22.1	23.5	24.6	34.9	36.3	38.6	38 22.13	− 0.01	10.18	18 38 32.30	. .
	α Aquilæ	†55	43.1	45.2	46.4	56.0	57.1	58.3	59.4	0.5	10.2	11.5	13.5	43 58.29	0.00	10.11	19 44 8.40	11.27
	β Cephei	56	58.4	3.6	7.3	35.3	37.9	41.3	45.0	48.0	16.1	19.5	25.7	26 41.65	+ 0.05	10.01	21 26 41.65	1.40
	ε Pegasi	57	5.2	7.1	8.5	18.0	19.1	20.3	21.5	22.5	32.3	33.4	35.5	37 20.31	0.00	+10.00	21 37 30.31	− 11.74

11. Unsteady. 13. Unsteady. 15–16. Unsteady. 18. Unsteady. 52–53. Unsteady.
55. Rather faint.
December 24. Night unfavorable.

		r.	
December 25, 8h.	Image east	0.04.	Clamp east.
	Image west	0.06.	Clamp west.
December 29, 10h. 5m.	Image east	0.03.	Clamp east.

Hazy; stars faint and blurred.

		s.
December 24, 18h. to 2h.	n. =	0.000.
5h. to 7h.		− 0.092.
25, ...		− 0.024.
25–26, 17h. to 20h.		+ 0.100.
29, ...		− 0.024.
29–30, 15h. to 22h.		+ 0.017.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	c.
h.	s.	s.	s.
Dec. 25, 7.0	+ 12.39	+ 0.038	0.000
26, 18.4	12.76	+ 0.038	. .
29, 18.6	10.72	− 0.057	. .
30, 17.9	+ 10.22	− 0.060	0.000

OBSERVATIONS

WITH

THE MURAL CIRCLE,

1863.

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.	
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.
March 11	1	Nadir 18h. 15m. . .	5	. .	179 59 59.1	61.5	62.4	60.2	58.2	60.5	60.32*d*	30.2739	.2685
	2	α Lyræ	9	I-IX.	0 14 58.2	60.6	61.8	58.2	58.2	58.8	59.30*d*	31.4248	.4049
	3	Nadir 18h. 40m. . .	5	. .	179 59 58.6	61.8	62.3	60.2	57.8	60.0	60.12*d*	30.2718	.2662
13	4	Nadir 7h. 0m. . .	5	. .	179 59 58.4	60.6	61.2	60.2	57.4	59.1	59.48*d*	30.3024	.2981
	5	Oeltzen N., 7681 . .	3	IV-VI.	319 44 58.9	57.6	61.0	54.8	57.2	58.4	57.98	28.1657	.1619
	6	α² Geminorum	5	III-VII.	6 39 59.2	60.2	61.8	59.3	57.4	59.4	59.55	25.5952	.5793
	7	α Canis Minoris . . .	5	III-VII.	33 19 59.1	61.3	61.8	60.1	59.2	60.8	60.38	32.7056	.6966
	8	β Geminorum . . .	5	III-VII.	10 29 59.1	60.5	62.0	60.0	59.4	59.1	60.02	25.9132	.9092
	9	Oeltzen S., 7669 . .	3	II-IV.	68 49 59.0	60.5	62.2	61.2	59.5	61.5	60.65	28.7093	.7288
	10	Lacaille 3073 . . .	3	II, IV, V.	" " "	"	"	"	"	"	"	26.8273	.8426
	11	Anonymous 7h. 52m. 6s.	5	III-VII.	" " "	"	"	"	"	"	"	31.4276	.4293
	12	15 Argus	9	I-IX.	62 44 59.1	59.7	60.2	59.9	58.1	60.7	59.62	27.1197	.1392
	13	Nadir	5	. .	179 59 58.9	62.2	62.1	61.7	57.8	58.1	60.13	30.3296	.3264
	14	Nadir 18h. 20m. . .	5	. .	179 59 59.2	65.6	63.5	65.3	58.0	59.7	61.88	30.3741	.3727
	15	α Lyræ	9	I-IX.	0 14 58.5	64.9	63.2	64.2	58.8	58.8	61.40*d*	31.5727	.5445
	16	Nadir 18h. 40m. . .	5	. .	179 59 59.5	65.7	63.3	64.8	58.8	60.0	62.02	30.3814	.3804
17	17	Sun N. L.	4	I-IV.	39 54 58.3	61.9	60.3	61.8	61.0	63.3	61.10	26.3735	.4163
	18	Sun S. L.	4	VI-IX.	40 29 58.0	61.5	59.5	61.1	60.1	63.5	60.92	31.9592	.9214
	19	Nadir 0h. 0m. . . .	5	. .	179 59 58.8	59.7	61.1	58.0	57.6	59.8	59.17*d*	30.3154	.3117
18	20	Lacaille 3192 . . .	5	III-VII.	68 19 50.2	52.4	51.8	49.2	54.0	56.0	52.27	27.1464	.9605
	21	Lacaille 3266 . . .	5	III-VII.	67 59 51.5	53.5	54.2	50.5	56.1	57.9	53.95	33.8024	.6012
	22	Lacaille 3356 . . .	5	III-VII.	70 34 60.9	63.1	62.5	59.9	64.4	66.1	62.82	33.9850	.7917
	23	Lacaille 3449 . . .	5	III-VII.	67 29 60.2	63.0	63.4	60.2	65.2	66.9	63.15	35.3176	.1276
	24	ε Hydræ	5	III-VII.	31 59 59.9	62.0	60.8	57.6	62.7	62.9	60.98	34.2240	.0332
	25	Lacaille 3567 . . .	5	III-VII.	65 59 61.0	62.0	63.4	59.9	65.8	66.0	63.02	31.6506	.4429
	26	B. A. C. 3082 . . .	5	III-VII.	64 59 61.6	63.6	63.9	60.9	65.1	66.1	63.53	31.7604	.5567
	27	Nadir 9h. 10m. . . .	5	. .	179 59 61.9	64.7	63.6	60.4	62.8	64.1	62.92*d*	30.4702	.4666
	28	ε Leonis	5	III-VII.	14 29 61.1	64.1	64.0	58.0	63.5	63.0	62.29	31.8252	.6173
	29	Lacaille 4046 . . .	5	III-VII.	69 44 61.0	64.3	65.0	61.2	65.4	67.2	64.02	33.5396	.3324
	30	α Leonis	5	III-VII.	26 14 60.9	64.7	64.5	58.8	64.0	63.0	62.65	30.1052	.9116
	31	Lacaille 4267 . . .	5	III-VII.	62 29 59.1	62.5	60.7	59.0	63.5	63.7	61.42	29.5956	.3864
	32	α Antliæ	5	III-VII.	69 14 59.4	63.9	63.9	60.7	64.5	65.6	63.00	33.3314	.1408
April 3	33	Nadir 12h. 30m. . .	5	. .	179 59 59.0	59.5	59.3	59.2	59.9	59.6	59.42*d*	29.9761	.9762
	34	Moon S. L.	7	I-IX.	49 19 59.8	61.3	60.6	61.6	64.2	63.6	61.85*d*	27.3016	.3267
	35	Nadir 17h. 45m. . .	5	. .	179 59 60.2	64.0	62.8	65.6	61.2	59.9	62.28	30.0687	.0702
	36	δ Ursæ Minoris . . .	5	1-5	312 19 60.5	61.6	62.3	61.2	61.3	57.7	60.77	32.2368	.2474
	37	α Lyræ	9	I-IX.	0 14 60.2	62.8	62.9	64.6	60.7	58.9	61.68*d*	31.2271	.2223
5	38	Nadir 17h. 40m. . .	5	. .	179 59 61.5	67.3	64.6	66.7	66.5	63.2	64.97	30.1228	.1248
	39	δ Ursæ Minoris . . .	5	1-5	312 19 59.9	60.4	60.8	58.9	63.0	59.3	60.38	32.2490	.2596
	40	α Lyræ	9	I-IX.	0 14 60.0	62.2	61.4	62.0	62.0	60.6	61.37*d*	31.1890	.1842
	41	Nadir 18h. 40m. . .	5	. .	179 59 58.9	64.5	61.1	63.4	62.3	59.6	61.63	30.0118	.0126
14	42	Sun N. L.	4	I-IV.	29 14 62.1	57.1	60.6	56.9	62.7	62.8	60.37	33.9578	.9730
	43	Sun S. L.	4	VI-IX.	29 44 62.4	57.8	60.2	56.7	63.5	62.6	60.53	30.4062	.3884
	44	Nadir 2h. 0m. . . .	5	. .	179 59 59.0	53.1	59.3	50.9	58.6	57.0	56.32	29.6435	.6469
May 1	45	B. A. C. 4262 . . .	5	III-VII.	78 4 59.9	54.8	57.3	58.0	59.1	64.3	58.90	32.6786	.6713
	46	Nadir 12h. 45m. . .	5	. .	179 59 59.6	54.7	57.4	57.2	57.4	61.1	57.77*d*	29.9958	.9960
	47	Lacaille 5382 . . .	5	I-V.	66 34 60.1	54.0	57.4	58.8	58.7	64.1	58.85	36.0288	.0307
	48	Lacaille 5387 . . .	5	V-IX.	" " "	"	"	"	"	"	"	22.9864	.0158
	49	Polaris S. P. . . .	5	5-1	307 29 60.5	55.0	56.9	55.8	59.6	62.5	58.38	30.6282	.6185
	50	Moon N. L. . . .	9	I-IX.	51 24 60.9	56.1	58.6	60.2	61.0	65.2	60.33	32.8324	.8353
	51	B. A. C. 4541 . . .	5	III-VII.	64 39 61.5	55.5	58.3	60.6	59.6	64.9	60.07	30.7834	.7783
	52	Lacaille 5646 . . .	5	III-VII.	" " "	"	"	"	"	"	"	36.0084	.0176
	53	η Bootis	5	III-VII.	19 49 61.7	57.5	59.7	60.8	60.9	63.6	60.70	33.1878	.1976
	54	Lacaille 5819 . . .	5	I-V.	73 4 61.8	57.8	59.1	62.8	60.1	65.9	61.25	29.4430	.4404
	55	Lacaille 5824 . . .	5	III-VII.	" " "	"	"	"	"	"	"	23.3584	.3704
	56	α Bootis	9	I-IX.	18 59 61.1	56.2	59.1	60.3	60.1	62.7	59.92	30.6332	.6117
	57	δ Ursæ Minoris . . .	5	1-5	312 19 62.0	58.0	60.5	60.7	60.3	62.0	60.58	32.6022	.5874
	58	α Lyræ	9	I-IX.	0 14 62.0	59.3	61.5	64.1	59.8	64.2	61.82	31.4292	.4125
	59	51 Cephei S. P. . . .	3	3-1	306 9 62.5	57.7	59.2	60.4	59.8	63.2	60.47	30.2900	.3031
	60	Nadir 18h. 45m. . .	5	. .	179 59 61.4	61.6	62.1	65.6	61.1	63.4	62.53*d*	30.1482	.1486

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
1	40°.9	41°.5	40°.4	40°.5	44°.5	27	39°.8	39°.0	39°.6	38°.9	38°.5
4	34.0	35.2	35.2	32.5	37.1	44	55.3	54.4	54.4	55.8	51 7
13	33.2	34.4	34.3	31.7	37.2	46	61.4	60.5	61.7	60.4	60.4
14	30.0	31.4	29.3	29.1	35.3	60	56.5	57.3	57.4	55.8	. .
19	36.9	36.7	37.1	37.0	33.2						

	THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
	At.	Ex.		Micrometer.	Object.					
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1										
2	- -	- -	30. 2546	— 35. 91	+ 0. 25	0 14 23. 64	+ 38 39 15. 61	+ 4. 21	H.	
3										
4										
5	33. 0	26. 0	30. 3185	+ 1 7. 33	— 52. 08	319 45 13. 23	79 8 26. 02	7. 59		
6	- -	- -	. . .	+ 2 27. 96	+ 7. 25	6 42 34. 76	32 11 4. 49	26. 17		Extremely unsteady.
7	- -	- -	. . .	— 1 14. 24	40. 49	33 19 26. 63	5 34 12. 62	36. 30		
8	31. 5	25. 7	. . .	+ 2 17. 66	11. 43	10 32 29. 11	+ 28 21 10. 14	30. 71		
9	- -	- -	. . .	49. 63	2 38. 28	68 53 28. 56	— 29 59 49. 31	49. 54		
0	- -	- -	. . .	+ 1 48. 52	2 38. 44	68 54 27. 61	30 0 48. 36	49. 68		
1	31. 3	25. 2	. . .	— 34. 68	2 38. 16	68 52 4. 13	29 58 24. 83	50. 08		
2	31. 0	25. 0	. . .	+ 1 39. 26	1 59. 60	62 48 38. 48	— 23 54 59. 23	51. 22		
3										
4										
5	- -	- -	30. 3141	— 38. 41	0. 24	0 14 23. 23	+ 38 39 16. 02	4. 34		
6										
7	- -	- -	30. 3383	+ 2 2. 44	44. 56	39 57 48. 10 }	— 1 20 13. 27			
8	36. 0	40. 3	. . .	— 49. 43	45. 45	40 29 56. 94 }				
9										
0	40. 8	37. 0	30. 3731	+ 1 46. 54	2 31. 01	68 24 9. 82	29 30 30. 57	54. 17	Ha.	Observations made with wire farthest from micrometer head. Correction for distance of wires r. 0. 2013.
1	- -	- -	. . .	— 1 40. 78	2 28. 16	68 0 40. 33	29 7 1. 08	55. 84		
2	40. 0	36. 9	. . .	1 46. 73	2 49. 44	70 36 5. 53	31 42 26. 28	58. 55		
3	- -	- -	. . .	2 28. 44	2 24. 59	67 29 59. 30	— 28 36 20. 05	60. 02		
4	- -	36. 5	. . .	1 54. 27	37. 70	31 58 44. 41	+ 6 54 54. 84	54. 24		
5	- -	- -	. . .	33. 40	2 14. 91	66 1 44. 53	— 27 8 5. 28	62. 31		
6	39. 0	36. 6	. . .	36. 95	2 8. 87	65 1 35. 45	— 26 7 56. 20	63. 78		
7										
8	38. 5	35. 5	. . .	38. 84	15. 66	14 29 39. 11	+ 24 24 0. 14	62. 36		
9	- -	- -	. . .	— 1 32. 38	2 42. 71	69 46 14. 35	— 30 52 35. 10	72. 40		
0	38. 0	35. 0	. . .	+ 14. 42	29. 91	26 15 46. 98	+ 12 37 52. 27	68. 90		
1	- -	- -	. . .	+ 30. 82	1 56. 23	62 32 28. 47	— 23 38 49. 22	75. 43		
2	38. 0	34. 1	. . .	— 1 26. 39	+ 2 38. 99	69 16 15. 60	30 22 36. 35	76. 15		
3									H.	
4	38. 4	35. 4	29. 9947	+ 1 23. 65	— 58 20. 68	48 23 4. 82	— 9 29 25. 57			Omitted V, VI.
5										
6	32. 0	30. 0	. 9975	— 1 10. 54	— 1 6. 94	312 17 43. 29	+ 86 35 55. 96	11. 24		
7	- -	- -	. . .	38. 40	+ 0. 24	0 14 23. 52	38 39 15. 73	4. 36		
8										
9	38. 1	31. 3	29. 9634	1 11. 90	— 1 6. 06	312 17 42. 42	86 35 56. 83	11. 02		
0	- -	- -	. . .	38. 19	+ 0. 24	0 14 23. 42	38 39 15. 83	4. 14		
1										
2	53. 5	56. 0	29. 7643	2 11. 96	28. 26	29 13 16. 67 }	9 24 25. 98		Ha.	
3	- -	- -	. . .	19. 57	28. 90	29 45 9. 86 }				
4									H.	
5	62. 0	58. 0	30. 0675	1 21. 64	4 24. 38	78 8 1. 64	— 39 14 22. 39	83. 34		
6										
7	- -	- -	. . .	— 3 6. 97	2 11. 39	66 34 3. 27	27 40 24. 02	79. 55		
8	61. 9	57. 5	. . .	+ 3 41. 09	+ 2 12. 10	66 40 52. 04	— 27 47 12. 79	+ 79. 46		
9	61. 5	57. 3	. . .	— 17. 28	— 1 14. 73	307 28 26. 37	+ 88 34 47. 12	— 59. 64		
0	61. 5	57. 1	. . .	1 26. 78	— 28 22. 22	50 55 11. 33	— 12 1 32. 08			
1	- -	- -	. . .	22. 29	+ 2 0. 81	64 41 38. 59	25 47 59. 34	+ 74. 62		Double; observed N. and brighter.
2	61. 2	56. 6	. . .	3 6. 56	2 0. 58	64 38 54. 09	— 25 45 14. 84	73. 85		
3	61. 0	56. 7	. . .	— 1 38. 14	20. 71	19 48 43. 27	+ 19 4 55. 98	67. 24		
4	- -	- -	. . .	+ 19. 66	3 6. 90	73 8 27. 81	— 34 14 48. 56	69. 35		
5	61. 0	56. 3	. . .	+ 3 29. 97	3 7. 51	73 11 38. 73	— 34 17 59. 48	69. 08		
6	61. 0	56. 2	. . .	— 17. 07	+ 19. 81	19 0 2. 66	+ 19 53 36. 59	64. 13		
7	57. 6	53. 5	. . .	1 19. 01	— 1 3. 45	312 17 38. 12	86 36 1. 13	6. 91		
8	- -	- -	. . .	42. 17	+ 0. 24	0 14 19. 89	38 39 19. 36	+ 0. 31		
9	57. 5	53. 2	. . .	— 7. 39	— 1 18. 99	306 8 34. 09	+ 87 14 54. 84	— 1. 34		
0										

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
17–18 } 42–43 }	Sun	{ 16′ 4″.42 { 15 56. 59

DATE.	Number.	OBJECT.	Mic. wires.	No. of Mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMET	
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Cor
1863.						° ′ ″	″	″	″	″	″	″	r.	
May 2	1	Lacaille 4749 . .	1	5	III-VII.	63 59 60.2	52.8	55.6	56.1	60.0	63.8	58.08	32.5968	.7
	2	Lacaille 4761 . .	1	5	III-VII.	" " "	"	"	"	"	"	"	40.0050	.1
	3	γ¹ Virginis	1	5	III-VII.	39 34 60.2	55.2	57.0	56.7	62.6	64.5	59.37	30.0660	.2
	4	38 Virginis	1	3	IV-VI.	41 39 60.4	56.1	58.1	57.7	62.3	64.5	59.85	27.0033	.1
	5	θ Virginis	1	5	III-VII.	43 39 60.5	54.7	57.0	56.0	60.6	62.4	58.53	27.2302	.3
	6	Jupiter, centre . .	m	5	III-VII.	45 19 60.5	55.3	59.0	57.0	62.0	62.9	59.45	35.8562	.8
	7	Nadir 13h. 25m. . .	. .	5	. .	179 59 59.0	55.2	58.0	56.6	58.9	61.0	58.12*d*	30.1229	.1
	8	η Bootis	1	3	IV-VI.	19 49 61.5	55.4	58.6	57.4	61.4	62.3	59.43	33.1400	.2
	9	94 Virginis	1	5	III-VII.	47 09 61.0	53.9	58.0	56.0	61.5	63.2	58.93	35.6752	.7
	10	Moon N. L. . . .	m	5	III-VII.	55 39 62.9	56.7	61.8	62.3	63.8	66.4	62.32	32.4820	.4
4	11	α Bootis	. .	9	I-IX.	18 59 62.0	54.7	58.3	58.5	59.6	63.5	59.43	30.9103	.9
	12	Nadir 14h. 20m. . .	. .	5	. .	179 59 61.9	56.6	60.2	58.8	59.9	62.7	60.02*d*	30.3485	.3
	13	Anon. 14h. 40m. 10s.	. .	5	III-VII.	75 54 61.9	55.1	59.6	60.5	59.6	64.8	60.25	32.8690	.8
	14	Anon. 45m. 17s.	. .	4	III-VII.	" " "	"	"	"	"	"	60.28	32.5632	.5
	15	Anon. 56m. 8s.	. .	5	III-VII.	" " "	"	"	"	"	"	60.36	22.4186	.4
	16	Lacaille 6237 . .	. .	5	III-VII.	" " "	"	"	"	"	"	60.39	32.8800	.8
	17	Anon. 15h. 2m. 34s.	. .	3	IV-VI.	" " "	"	"	"	"	"	60.40	41.6973	.6
	18	Lacaille 6261 . .	. .	3	V-VII.	" " "	"	"	"	"	"	60.41	39.2863	.3
	19	Anon. 15. 8m. 14s.	. .	4	V-VIII.	" " "	"	"	"	"	"	60.44	40.8108	.8
	20	Anon. 10m. 29s.	. .	5	III-VII.	" " "	"	"	"	"	"	60.46	31.5530	.5
	21	Anon. 12m. 54s.	. .	5	III-VII.	" " "	"	"	"	"	"	60.47	33.8710	.8
	22	Anon. 15m. 16s.	. .	5	III-VII.	" " "	"	"	"	"	"	60.49	31.0802	.0
	23	Anon. 16m. 56s.	. .	3	IV-VI.	" " "	"	"	"	"	"	60.50	40.0877	.0
	24	Lacaille 6382 . .	. .	3	VI-VIII.	" " "	"	"	"	"	"	60.52	22.7157	.7
	25	Anon. 15h. 21m. 35s.	. .	3	V-VII.	" " "	"	"	"	"	"	60.54	15.1617	.1
	26	Anon. 24m. 45s.	. .	5	III-VII.	" " "	"	"	"	"	"	60.56	19.9422	.9
	27	B. A. C. 5171 . .	. .	5	III-VII.	75 54 62.1	55.5	59.8	61.0	60.0	65.3	60.62	41.8464	.8
	28	ξ Lupi	. .	5	III-VII.	72 24 62.0	56.8	58.1	61.3	59.9	64.9	60.50	31.2810	.2
	29	β¹ Scorpii	. .	5	III-VII.	58 19 61.1	57.3	58.3	61.5	61.5	67.0	61.12	34.4600	.4
	30	δ Ophiuchi . . .	. .	9	I-IX.	42 14 60.9	57.3	59.1	60.3	61.0	64.8	60.57	33.7468	.7
	31	Nadir 16h. 15m. . .	. .	5	. .	179 59 61.5	56.9	60.3	60.0	59.2	62.3	60.03*d*	30.3596	.3
	32	Moon S. L. . . .	. .	5	V-IX.	61 29 62.4	57.3	60.3	61.5	61.0	66.1	61.43	33.1254	.1
	33	δ Ursæ Minoris . .	. .	5	1-5	312 19 62.0	56.6	61.2	59.0	60.4	61.2	60.07	32.9080	.9
	34	α Lyræ	. .	9	I-IX.	0 14 60.2	56.6	59.1	61.2	58.2	62.0	59.55*d*	31.6746	.6
	35	Nadir 18h. 40m. . .	. .	5	. .	179 59 59.6	58.7	60.2	61.6	59.1	61.0	60.03*d*	30.3448	.3
8	36	Polaris	. .	5	V.	310 19 60.9	56.7	60.0	56.7	61.7	58.6	59.10*d*	30.2404	.2
9	37	Sun N. L. . . .	. .	4	I-IV.	21 14 60.6	57.5	57.2	60.9	62.3	61.9	60.07	28.1280	.1
	38	Sun S. L. . . .	. .	3	VII-IX.	21 49 61.5	58.9	59.0	61.5	62.9	63.5	61.22	34.3197	.3
	39	Nadir 3h. 27m. . .	. .	5	. .	179 59 60.7	56.8	57.2	59.5	59.8	60.8	59.13*d*	30.3063	.3
	40	Venus, centre . .	. .	5	III-VII.	13 49 60.5	57.5	55.7	57.5	60.5	60.1	58.63	30.5476	.5
	41	B. A. C. 4282 . .	. .	5	III-VII.	353 59 59.9	56.3	58.1	58.0	60.8	62.0	59.18	25.2036	.2
	42	12 Canum Venat. . .	. .	5	III-VII.	359 49 60.1	55.4	58.4	59.2	60.0	61.0	59.02	29.8312	.8
	43	Jupiter, centre . .	. .	5	III-VII.	45 04 59.5	54.9	56.5	58.1	60.3	60.8	58.35	36.7688	.7
	44	g Ursæ Majoris . .	. .	5	III-VII.	343 09 59.5	54.9	58.0	56.1	60.3	60.9	58.28	26.7172	.6
	45	75 Virginis . . .	. .	5	III-VII.	53 29 60.2	56.0	56.2	58.7	61.0	62.9	59.17	26.3034	.3
	46	m Virginis . . .	. .	5	III-VII.	46 49 60.7	55.2	57.1	59.2	62.3	62.9	59.57	23.5976	.5
	47	η Ursæ Majoris . .	. .	5	III-VII.	348 54 60.7	57.0	60.5	59.0	60.1	61.5	59.80	32.1198	.1
	48	11 Bootis . . .	. .	5	III-VII.	10 44 60.5	57.0	59.0	60.3	61.2	61.4	59.90	19.4808	.4
	49	α Draconis . . .	. .	3	IV, V & VII	333 49 60.1	55.1	58.0	56.5	59.2	59.9	58.13	25.8203	.8
	50	α Bootis	. .	5	III-VII.	18 59 62.0	57.1	60.0	60.1	62.5	62.0	60.62	30.9634	.9
	51	Nadir 14h. 20m. . .	. .	5	. .	179 59 60.4	57.4	59.4	59.7	60.1	60.8	59.63*d*	30.3374	.3
	52	Lacaille 6042 . .	. .	5	I-V.	64 39 60.0	55.8	57.9	59.9	60.1	62.3	59.33	46.2146	.2
	53	Lacaille 6047 . .	. .	4	VI-IX.	" " "	"	"	"	"	"	"	26.2090	.2
	54	α¹ Libræ	. .	5	I-V.	54 19 59.4	56.0	56.6	60.0	61.1	61.3	59.07	34.0424	.0
	55	α² Libræ	. .	4	VI-IX.	" " "	"	"	"	"	"	"	28.8305	.8
	56	β Ursæ Minoris . .	. .	3	IV-VI.	324 09 59.5	55.0	58.1	56.3	59.9	60.4	58.20	27.3863	.3
10	57	α Ophiuchi	. .	5	III-VII.	26 14 59.1	55.2	56.5	57.8	58.4	60.5	57.92	33.1024	.1
	58	α Lyræ	. .	9	I-IX.	0 14 58.7	54.0	55.7	57.0	56.7	60.3	57.07*d*	31.6283	.5
	59	Nadir 18h. 40m. . .	. .	5	. .	179 59 59.8	57.4	58.2	60.1	59.2	61.2	59.32*d*	30.3146	.3
11	60	ε Bootis	. .	9	I-IX.	11 14 60.0	60.7	61.0	61.5	63.3	59.4	60.98	31.5209	.5

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
7	63.7	62.5	63.4	63.0	61.8	51	59.6	59.5	59.6	58.9	58.9
12	64.7	64.1	63.9	64.8	65.0	59	61.9	60.6	60.7	61.3	61.7
39	61.6	60.5	61.3	61.5	57.0						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	' "	' "	° ' "	° ' "	"		
66.0	62.3	30.1931	— 1 19.36	+ 1 55.66	64 0 34.38	— 25 6 55.13	+ 84.50	Ha.	Night quite cloudy and unfavorable.
. .	. .	. . .	5 12.21	1 55.34	63 56 41.21	25 3 1.96	84.55		
64.5	61.0	. . .	— 0.58	47.03	39 35 45.82	0 42 6.57	77.63		
. .	. .	. . .	+ 1 35.54	50.68	41 42 26.07	2 48 46.82	77.20		
. .	. .	. . .	+ 1 28.19	54.37	43 42 21.09	4 48 41.84	75.98		
64.0	60.5	. . .	— 2 57.46	56.14	45 17 58.13	— 6 24 18.88			
. .	. .	. . .	1 37.01	20.55	19 48 42.97	+ 19 4 56.28	67.11		
. .	. .	. . .	2 55.79	+ 1 1.38	47 8 4.52	— 8 14 25.27	68.24		
63.5	59.3	. . .	1 11.73	— 31 8.94	55 7 41.65	— 16 14 2.40			
64.8	60.2	30.3476	17.39	+ 19.52	19 0 1.56	+ 19 53 37.69	63.54	H.	
63.9	59.5	. . .	1 19.14	3 41.79	75 57 22.90	— 37 3 43.65	59.54		
. .	. .	. . .	— 1 9.27	3 41.83	75 57 32.84	37 3 53.59	58.14		Omitted VI.
63.6	59.4	. . .	+ 4 8.37	3 43.24	76 2 51.97	37 9 12.72	55.14		
. .	. .	. . .	— 1 19.51	3 41.77	75 57 22.65	37 3 43.40	53.81		
. .	. .	. . .	5 55.51	3 40.56	75 52 45.45	36 59 6.20	53.31		
. .	. .	. . .	4 40.92	3 40.89	75 54 0.38	37 0 21.13	52.93		
. .	. .	. . .	5 28.31	3 40.68	75 53 12.81	36 59 33.56	51.65		
. .	. .	. . .	37.64	3 41.96	75 58 4.78	37 4 25.53	50.98		
. .	. .	. . .	1 50.57	3 41.64	75 56 51.54	37 3 12.29	50.26		
. .	. .	. . .	23.44	3 42.02	75 58 19.07	37 4 39.82	49.56		
63.2	59.4	. . .	— 5 5.76	3 40.74	75 53 35.48	36 59 56.23	49.05		
. .	. .	. . .	+ 3 59.05	3 43.18	76 2 42.75	37 9 3.50	48.31		
. .	. .	. . .	7 55.47	3 44.24	76 6 40.25	37 13 1.00	47.74		
. .	. .	. . .	+ 5 26.01	3 43.56	76 4 10.13	37 10 30.88	46.65		
63.0	59.2	. . .	— 6 0.56	3 40.59	75 52 40.65	36 59 1.40	43.93		
. .	. .	. . .	29.80	2 57.01	72 27 27.71	33 33 48.46	39.69		Double; observed southern and brightest.
62.8	58.9	. . .	2 8.95	1 31.67	58 19 23.84	19 25 44.59	38.26		
. .	. .	. . .	1 46.28	+ 51.50	42 14 5.77	3 20 26.52	37.14		
62.6	58.5	. . .	1 29.43	— 67 17.05	60 21 14.95	— 21 27 35.70			
61.4	57.5	. . .	1 20.22	— 1 2.46	312 17 37.39	+ 86 36 1.86	+ 6.16		
. .	. .	. . .	— 40.64	+ 0.24	0 14 19.15	38 39 20.10	— 0.45		
59.0	60.5	30.3428	+ 3.07	— 1 7.30	310 18 54.87	88 34 44.38	— 57.89	Ha.	
61.5	65.0	. . .	+ 1 9.23	+ 19.02	21 16 28.32 }	17 21 16.99			Limbs of sun very unsteady and exceedingly ill defined.
. .	. .	. . .	— 2 4.55	19.54	21 48 16.21 }				
63.0	67.5	. . .	— 5.98	+ 12.27	13 50 4.92	25 3 34.33			
61.5	58.1	30.3564	+ 2 41.40	— 05.99	354 2 34.59	44 51 4.66	+ 66.05		
. .	. .	. . .	+ 16.84	— 0.16	359 50 15.70	+ 39 3 23.55	67.02		
61.5	57.6	. . .	— 3 20.77	+ 56.16	45 2 33.74	— 6 8 54.49			
. .	. .	. . .	+ 1 54.84	— 17.37	343 11 35.75	+ 55 42 3.50	62.09		
. .	. .	. . .	2 6.69	+ 1 17.74	53 33 23.60	— 14 39 44.35	74.51		
. .	. .	. . .	+ 3 32.28	+ 1 1.48	46 54 33.33	— 8 0 54.08	72.19		
61.0	56.2	. . .	— 55.34	— 11.31	348 53 53.15	+ 49 59 46.10	61.46		
. .	. .	. . .	+ 5 41.24	+ 11.05	10 50 52.19	28 2 47.06	63.59		
. .	. .	. . .	+ 2 22.80	— 28.29	333 51 52.64	65 1 46.61	57.15		
60.5	55.9	. . .	— 19.04	+ 19.86	19 0 1.44	+ 19 53 37.81	62.75		
. .	. .	. . .	— 8 17.65	2 0.42	64 33 42.10	25 40 2.85	62.17		
. .	. .	. . .	+ 2 8.99	2 1.35	64 44 9.67	25 50 30.42	62.18		
. .	. .	. . .	— 1 55.73	1 20.05	54 19 23.39	15 25 44.14	59.24		
. .	. .	. . .	+ 45.84	+ 1 20.18	54 22 5.09	— 15 28 25.84	59.18		
60.0	56.4	. . .	+ 1 33.32	— 41.56	324 10 49.96	+ 74 42 49.29	49.86		
62.8	58.4	30.3336	— 1 27.06	+ 28.28	26 13 59.14	+ 12 39 40.11	+ 13.84	H.	
. .	. .	. . .	39.62	0.24	0 14 17.69	38 39 21.56	— 1.78		
69.7	65.7	30,3447	— 36.27	+ 11.23	11 14 35.94	+ 27 39 3.31	+ 56.57		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		' "
37.38	Sun	15 53.94

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
May 11	1	α^2 Libræ	9	I-IX.	54 19 59.7	59.1	59.0	60.2	62.8	58.9	59.95	28.8907	.8951	. .
	2	β Ursæ Minoris . . .	3	1, 3, 5	324 9 60.4	59.0	61.6	58.7	63.4	59.3	60.40	27.5150	.5067	30.102
	3	Anon 15h. 12m. 34s. .	3	IV-VI.	76 29 60.4	59.3	61.2	62.0	63.4	60.0	61.05	24.2983	.3112	30.100
	4	Nadir 15h. 25m. . .	5	. .	179 59 60.6	60.8	61.7	61.3	62.5	58.8	60.95*d*	30.3770	.3750	. .
	5	θ Lupi	3	IV-VI.	75 14 60.6	60.6	62.0	63.2	63.2	61.0	61.77	29.9110	.9131	30.096
	6	Weisse XVI, 111 . .	3	IV-VI.	49 9 59.8	60.5	60.2	61.9	63.2	61.4	61.17	27.9277	.9292	. .
	7	Nadir 16h. 20m. . .	5	. .	179 59 59.0	59.7	60.5	60.6	60.8	57.5	59.68*d*	30.3455	.3430	. .
	8	Weisse XVI, 562 . .	4	III-VII.	38 39 58.8	60.0	60.5	60.4	62.6	59.1	60.23	32.5610	.5496	. .
	9	Weisse XVI, 637 . .	3	IV-VI.	38 44 58.7	59.6	60.0	60.6	63.7	59.8	60.40	28.4720	.4682	30.096
	10	Nadir 18h. 15m. . .	5	. .	179 59 60.0	60.2	62.0	61.8	60.6	57.8	60.40*d*	30.3772	.3752	. .
	11	α Lyræ	9	I-IX.	0. 14 60.0	61.3	61.8	62.7	61.8	59.0	61.10*d*	31.7978	.7727	. .
	12	Polaris	5	V.	310 19 59.1	61.2	61.2	58.5	62.8	56.0	59.80	30.2880	.2950	30.142
12	13	Sun S. L.	4	I-IV.	20 59 60.0	61.9	58.8	62.9	65.0	61.5	61.68	28.0572	.0586	30.124
	14	Sun N. L.	4	VI-IX.	20 29 57.4	58.8	57.8	58.5	62.1	57.0	58.60	31.2230	.2264	. .
	15	Nadir 3h. 36m.	5	. .	179 59 59.7	56.9	58.8	57.0	60.2	57.1	58.28*d*	30.3214	.3293	. .
	16	Venus, centre . . .	5	III-VII.	13 34 60.9	64.8	61.5	62.0	66.4	61.0	62.77	26.8384	.8297	30.060
13	17	Sun S. L.	7	II-VIII.	20 44 60.7	61.9	62.1	63.4	63.2	59.9	61.87	27.9856	.9854	30.006
	18	Nadir 3h. 25m.	5	. .	179 59. 60.5	59.0	62.0	60.7	60.3	57.6	60.02*d*	30.3865	.3848	. .
14	19	Anon. 14h. 53m. 29s. .	5	III-IX	70 44 59.0	64.1	62.5	69.0	59.6	57.0	61.86	22.5206	.5249	29.940
	20	Anon. 58m. 14s. .	4	IV-VIII.	“ “ “	“	“	“	“	“	“	28.1555	.1763	. .
	21	Anon. 15h. 0m. 54s. .	2	IV-VI.	“ “ “	“	“	“	“	“	“	22.8480	.8464	. .
	22	Anon. 14m. 40s. .	5	III-VII.	“ “ “	“	“	“	“	“	“	39.2972	.3127	29.952
	23	Anon. 19m. 13s. .	3	V-VII.	“ “ “	“	“	“	“	“	“	14.6483	.6432	. .
	24	Anon. 21m. 46s. .	3	IV-VI.	“ “ “	“	“	“	“	“	“	38.5380	.5302	. .
	25	Anon. 26m. 33s. .	3	III-V-VII.	70 44 58.3	63.7	62.7	69.2	60.5	56.7	61.86	24.1853	.2036	29.960
	26	Nadir 15h. 40m. . .	5	. .	179 59 59.1	65.1	65.8	70.6	59.6	55.0	62.53*d*	30.4455	.4453	. .
	27	β^1 Scorpii	9	I-IX.	58 14 59.3	66.6	65.3	72.4	63.2	59.0	64.30	25.0558	.0712	29.958
	28	δ Ophiuchi	9	I-IX.	42 14 58.6	65.3	64.8	70.5	61.7	56.0	62.82	33.8969	.8970	. .
	29	α Scorpii	9	I-IX.	64 59 59.0	63.8	64.0	70.3	59.8	55.2	62.02	32.0543	.0726	29.956
	30	Weisse XVI, 562 . .	4	III-VII.	38 39 57.8	63.7	64.2	69.1	60.5	54.7	61.67	32.7385	.7258	. .
	31	Weisse XVI, 637 . .	4	III-VII.	38 44 57.0	63.2	63.0	68.9	60.9	54.6	61.27	28.6332	.6195	29.958
	32	Anon. 16h. 46m. 47s. .	5	III-VII.	75 44 58.7	65.1	65.3	71.2	60.5	55.6	62.73	25.3266	.3415	. .
	33	Anon. 52m. 33s. .	4	IV-VII.	“ “ “	“	“	“	“	“	“	10.2122	.2314	. .
	34	Anon. 57m. 0s. .	4	III-V-VII.	“ “ “	“	“	“	“	“	“	31.7318	.7231	29.960
	35	Oeltzen S. 16420 . .	4	II-V.	65 24 58.2	63.6	63.3	70.6	60.3	55.2	61.87	33.8218	.8146	. .
	36	A^1 Ophiuchi	5	III-VII.	65 14 59.5	64.0	65.0	70.9	60.7	55.9	62.67	29.5966	.5873	29.960
	37	α Ophiuchi	9	I-IX.	26 14 59.0	66.4	65.8	71.2	61.1	54.8	63.05	33.3552	.3574	29.970
	38	Comet 1863 II . . .	7	II-VIII.	322 9 59.1	62.7	64.6	68.0	59.1	52.7	61.03	16.9557	.9001	29.968
	39	δ Ursæ Minoris . . .	5	1-5	312 19 59.0	63.1	65.2	67.9	59.7	53.1	61.33	33.0172	.0215	29.970
	40	α Lyræ	9	I-IX.	0 14 58.9	65.1	65.2	71.2	59.4	54.7	62.42	31.8781	.8586	. .
	41	Nadir 18h. 40m. . .	5	. .	179 59 57.2	65.0	63.6	70.8	57.8	53.1	61.25*d*	30.4003	.3989	. .
	42	Polaris	5	V.	310 19 61.1	65.5	66.1	67.0	63.0	54.5	62.87	30.3548	.3648	30.062
15	43	Sun N. L.	4	I-IV.	20 19 61.0	65.0	64.6	68.0	64.2	55.8	63.10	35.6492	.6275	30.064
	44	Sun S. L.	3	VII-IX.	19 44 63.1	67.7	67.5	71.6	67.0	58.8	65.95	29.4740	.4589	. .
	45	Nadir 3h. 46m.	5	. .	179 59 60.1	64.7	64.6	67.5	61.9	55.0	62.30*d*	30.4490	.4475	. .
	46	Lacaille 5015 . . .	5	I-V.	71 04 62.3	64.9	64.0	69.5	65.4	62.2	64.72	34.7236	.7147	30.036
	47	Lacaille 5125 . . .	5	I-V.	62 59 58.6	60.6	59.0	65.0	60.3	56.3	59.97	32.4062	.4089	. .
	48	B. A. C. 4173 . . .	5	V-IX.	“ “ “	“	“	“	“	“	“	36.1168	.1446	. .
	49	Lacaille 5230 . . .	5	I-V.	67 44 58.8	63.0	62.2	68.1	62.6	60.2	62.48	42.4588	.4583	. .
	50	Lacaille 5282 . . .	9	I-IX.	63 04 60.3	63.5	61.8	67.5	62.6	59.2	62.48	24.5069	.5094	. .
	51	12 Canum Venat. . . .	5	V-IX.	359 49 59.0	64.2	64.8	68.6	63.0	57.2	62.80	29.9960	.9940	30.040
	52	Lacaille 5454 . . .	9	I-IX.	62 29 59.3	62.3	60.1	67.2	61.6	57.4	61.32	38.7728	.7727	.
	53	Jupiter, centre . . .	5	III-VII.	44 49 59.0	63.5	61.1	66.3	63.1	56.0	61.50	29.7262	.7133	. .
	54	Nadir 13h. 45m. . .	5	. .	179 59 59.0	62.3	62.8	65.2	60.8	54.1	60.70*d*	30.3415	.3486	. .
	55	θ Centauri	9	I-IX	74 34 59.0	61.9	61.8	67.0	62.2	56.9	61.47	35.7569	.7618	30.032
	56	Lacaille 5975 . . .	5	III-VIII.	70 19 57.0	61.6	60.6	66.0	61.5	56.6	60.55	19.1866	.2080	. .
	57	Lacaille 5988 . . .	4	V-IX.	“ “ “	“	“	“	“	“	“	44.9902	.0184	. .
	58	Lacaille 6042 . . .	5	I-V.	64 39 57.5	61.0	60.4	66.0	59.9	54.8	59.93	46.1950	.2080	. .
	59	Lacaille 6047 . . .	4	V-IX.	“ “ “	“	“	“	“	“	“	26.1530	.1855	. .
	60	α^1 Libræ	5	I-V.	54 19 59.0	64.1	61.9	68.1	63.5	57.0	62.27	34.1412	.1490	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
4	68.7 °	66.8 °	68.8 °	68.1 °	66.8 °	18	76.1 °	72.6 °	74.5 °	75.4 °	70.6 °
10	68.4	66.0	67.6	67.6	. .	26	62.0	60.5	60.4	58.6	69.8
15	76.5	72.2	76.0	76.8	67.0						

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	30.3447	+ 45.44	+ 1 18.78	54 22 4.17	— 15 28 24.92	+ 59.32	H.	
69.5	65.5	. . . .	1 28.97	— 40.85	324 10 48.52	+ 74 42 50.73	49.34		
69.2	65.7	. . . .	3 9.16	+ 3 52.00	76 37 2.21	— 37 43 22.96	51.47		
									After this reading adjusted collimation.
68.9	66.4	30.3532	13.80	3 31.23	75 18 46.80	36 25 7.55	37.24		
. .	. .	. . . .	+ 1 16.00	1 5.42	49 12 22.59	— 10 18 43.34	36.18		
. .	. .	. . . .	— 1 8.86	45.25	38 39 36.62	+ 0 14 2.63	29.94		Omitted V.
68.6	65.6	. . . .	+ 59.10	45.45	38 46 44.95	0 6 54.30	+ 28.87		
. .	. .	30.3624	— 44.22	+ 0.24	0 14 17.12	38 39 22.13	— 1.99		
69.5	80.0	30.3842	+ 2.80	— 1 4.94	310 18 57.66	88 34 41.59	— 57.07	Ha.	
77.0	85.2	. . . .	+ 1 12.91	+ 17.98	21 1 32.57 }	18 7 58.13			
. .	. .	. . . .	— 26.40	17.47	20 29 49.67 }				
75.5	85.0	. . . .	+ 1 51.45	+ 11.58	13.37 5.80	25 16 33.45			
75.3	82.0	30.3842	1 15.21	— 15 33.72	20 30 43.36	+ 18 22 55.89		H.	
57.3	53.2	30.3660	4 5.84	+ 2 44.50	70 51 52.20	— 31 58 12.95	+ 57.35		Omitted VI, VIII.
. .	. .	.3658	1 8.64	2 44.18	70 48 54.68	31 55 15.43	56.02		Omitted VII.
. .	. .	.3658	+ 3 55.75	2 44.67	70 51 42.28	31 58 3.03	55.27		
56.5	52.7	.3653	— 4 40.54	2 43.43	70 43 4.75	31 49 25.50	51.28		
. .	. .	.3651	+ 8 12.90	2 45.42	70 56 0.18	32 2 20.93	49.92		
. .	. .	.3651	— 4 16.01	2 43.54	70 43 29.39	31 49 50.14	49.15		
56.3	52.5	.3649	+ 3 13.17	2 44.72	70 51 0.75	31 57 21.50	47.69		
56.2	52.6	.3640	+ 2 45.94	1 33.44	58 19 23.68	19 25 44.43	38.45		
. .	. .	.3637	— 1 50.76	52.48	42 14 4.54	3 20 25.29	36.31		
56.0	52.6	.3632	53.58	2 3.39	65 1 11.83	— 26 7 32.58	30.51		
. .	. .	.3629	— 1 14.08	46.26	38 39 33.85	+ 0 14 5.40	29.63		Omitted VI.
56.0	52.6	.3628	+ 54.67	46.46	38 46 42.40	+ 0 6 56.85	28.49		Omitted V.
. .	. .	.3624	2 37.44	3 44.65	75 51 24.82	— 36 57 45.57	20.34		
. .	. .	.3622	+ 10 31.18	3 46.77	75 59 20.68	37 5 41.43	18.24		
55.6	52.5	.3620	— 42.66	3 43.81	75 48 3.88	36 54 24.63	16.67		
. .	. .	.3618	— 1 48.23	2 5.70	65 25 19.34	26 31 40.09	15.99		
55.5	52.5	.3614	+ 24.29	2 4.96	65 17 31.92	— 26 23 52.67	14.66		
55.5	52.4	.3610	— 1 33.93	+ 28.55	26 13 57.67	+ 12 39 41.58	13.17		
55.4	52.0	.3606	+ 7 2.04	— 38.92	322 16 24.15	76 37 15.10			
55.0	51.4	.3596	— 1 23.45	— 1 3.69	312 17 34.19	86 36 5.06	+ 3.61		
. .	. .	.3592	— 47.01	+ 0.24	0 14 15.65	38 39 23.60	— 2.75		
60.0	60.2	30.3741	+ 0.29	— 1 7.28	310 18 55.88	+ 88 34 43.37	— 56.43	Ha.	
63.5	63.5	. . . .	— 2 44.72	+ 18.10	20 17 36.48 }	+ 18 51 54.90			
. .	. .	. . . .	+ 28.69	17.58	19 45 52.22 }				
64.0	58.2	30.3263	— 2 17 59	2 45.40	71 05 32.53	— 32 11 53.28	+ 86.39		
. .	. .	. . . .	1 5.30	1 52.15	63 00 46.82	24 07 07.57	84.50		
. .	. .	. . . .	3 2.42	1 51.99	62 58 49.54	24 05 10.29	83.84		
. .	. .	. . . .	— 6 20.37	2 18.87	67.41 0.98	28 47 21.73	82.70		
. .	. .	. . . .	+ 3 2.38	+ 1 53.09	63 09 57.95	— 24 16 18.70	81.97		
62.0	56.4	. . . .	+ 10.42	— 0.16	359 50 13.06	+ 39 03 26.19	65.81		
. .	. .	. . . .	— 4 24.82	+ 1 49.89	62 27 26.39	— 23 33 47.14	78.79		
. .	. .	. . . .	+ 19.22	55.94	44 51 16.66	5 57 37.41			
61.0	54.8	. . . .	— 2 50.42	3 25.62	74 35 36.67	35 41 57.42	71.26		
. .	. .	. . . .	+ 5 48.59	2 41.10	70 28 30.24	31 34 50.99	65.13		Omitted wire VI.
. .	. .	. . . .	— 7 40.64	2 39.16	70 14 59.07	31 21 19.82	64.62		Omitted wire VI.
. .	. .	. . . .	— 8 17.94	2 0.75	64 33 42.74	25 40 03.49	62.63		
. .	. .	. . . .	+ 2 9.83	2 1.69	64 44 11.45	25 50 32.20	62.52		Omitted wire VI.
. .	. .	. . . .	— 1 59.85	+ 1 20.31	54 19 22.73	— 15 25 43.48	+ 59.33		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
13–14 43–44	Sun	15′ 51″.45 52.13

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
May 19	1	α Bootis	4	III-VII.	18 59 61.1	63.9	63.1	66.0	64.5	57.3	62.65	31.0353	.0380	. .
	2	B. A. C. 4784 . . .	5	III-VII.	67 44 61.0	63.6	63.0	67.0	64.5	61.5	63.43	32.2444	.2609	30.170
	3	Nadir 14h. 37m. . .	5	. .	179 59 60.8	63.2	63.4	64.9	62.9	57.1	62.05*d*	30.3627	.3681	. .
21	4	B. A. C. 4253 . . .	5	III-VII.	65 19 61.4	59.6	60.0	62.0	63.0	61.3	61.22	40.1470	.1622	30.262
	5	B. A. C. 4278 . . .	5	III-VII.	66 24 61.6	59.6	59.7	62.0	63.3	62.2	61.40	28.0612	.0734	. .
	6	Lacaille 5304 . . .	5	III-VII.	64 54 62.2	59.1	60.0	63.7	64.0	61.2	61.70	36.8328	.8309	. .
	7	Polaris S. P. . . .	5	V.	307 29 60.1	59.1	55.5	58.4	63.0	58.9	59.17	31.0344	.0412	. .
	8	Jupiter, centre . .	5	III-VII.	44 44 60.0	59.3	58.5	60.3	63.1	58.0	59.87	37.6170	.6045	30.260
	9	α Virginis	5	III-VII.	49 19 60.1	60.4	59.6	62.0	64.3	60.5	61.15	31.1864	.2000	. .
	10	ζ Virginis	5	III-VII.	38 49 60.1	59.9	61.4	61.8	64.3	60.1	61.27	36.4898	.4842	. .
	11	η Ursæ Majoris . . .	5	III-VII.	348 54 62.1	61.5	63.8	62.2	63.9	59.0	62.08	32.2438	.2471	. .
	12	η Bootis	5	III-VII.	19 49 62.9	62.9	63.8	63.9	65.3	60.4	63.20	33.6042	.5884	. .
	13	50 Cassiopeæ S. P. . .	3	5, 3 & 1.	290 39 64.0	62.9	63.0	63.0	64.9	60.5	63.05	27.5893	.5761	30.244
	14	Nadir 14h. 4m. . . .	5	. .	179 59 60.0	61.8	61.2	63.0	62.3	58.6	61.15*d*	30.3383	.3455	. .
	15	5 Ursæ Minoris . . .	5	IV-VI.	322 34 60.9	60.4	62.2	61.3	63.7	58.7	61.20	28.2180	.2228	30.240
22	16	Sun N. L.	4	I-IV.	18 14 60.4	62.2	61.3	63.7	62.5	58.7	61.47	31.5055	.4868	. .
	17	Sun S. L.	4	VI-IX.	18 44 60.9	61.7	61.2	64.1	63.1	59.3	61.72	28.3635	.3691	30.254
	18	Nadir 5h. 40m. . . .	5	. .	179 59 59.8	61.3	60.4	61.6	62.0	57.8	60.48	30.3683	.3662	. .
	19	Venus, centre . . .	5	III-VII.	13 39 59.4	59.8	58.4	56.8	61.1	56.0	58.58	31.5200	.5082	30.218
	20	Polaris S. P. . . .	2	4, 5	307 29 58.3	55.8	56.7	54.5	59.6	55.6	56.75	30.9895	.9994	30.160
	21	Jupiter N. L. . . .	3	V-VII-IX.	44 39 58.3	56.6	57.5	57.1	59.9	56.2	57.60	31.0407	.0611	. .
	22	Jupiter, S. L. . . .	2	VI, VIII.	" " "	"	"	"	"	"	"	29.8360	.8441	. .
	23	A Cassiopeæ S. P. . .	9	IX-I.	288 29 58.2	53.9	54.8	55.0	57.9	54.2	55.67	30.3568	.4217	30.154
	24	α Draconis	5	III-VII.	333 49 58.4	57.4	59.5	57.9	59.0	55.8	58.00	25.9158	.8996	30.140
	25	α Bootis	9	I-IX.	18 59 58.5	56.8	58.2	58.6	59.1	55.7	57.82	30.9193	.9119	. .
	26	5 Ursæ Minoris . . .	5	III-VII.	322 34 59.6	57.7	60.6	60.2	60.4	58.2	59.45	28.1774	.1587	30.140
	27	ε Bootis	9	I-IX.	11 14 59.5	59.5	60.2	61.8	60.2	58.5	59.95	31.4866	.4700	. .
	28	β Ursæ Minoris . . .	5	1-5.	324 9 58.9	57.7	59.9	58.8	60.1	58.0	58.90	27.5046	.4977	. .
	29	48 Cephei S. P. . . .	5	VII-III.	296 9 59.0	56.4	56.8	57.3	59.0	55.2	57.28	31.8728	.9037	30.132
	30	Nadir 15h. 10m. . .	5	. .	179 59 58.6	59.8	59.4	62.1	58.8	57.5	59.37*d*	30.2680	.2658	. .
	31	Nadir 18h. 20m. . .	5	. .	" " 59.8	62.7	62.1	66.4	59.4	58.6	61.50*d*	30.3325	.3300	. .
	32	α Lyræ	9	I-IX.	0 14 60.0	63.6	63.2	66.2	61.4	59.0	62.23*d*	31.8674	.8471	. .
23	33	51 Cephei S. P. . . .	5	5-1	306 9 59.3	60.0	60.3	61.2	59.2	55.3	59.22	30.6720	.6603	30.094
	34	12¹ Canum Venaticorum .	5	I-V.	359 49 60.9	60.0	61.2	62.1	62.2	59.0	60.90	29.4888	.4589	29.960
	35	12² Canum Venaticorum .	4	VI-IX.	" " "	"	"	"	"	"	"	29.9090	.9000	. .
	36	θ Virginis	5	III-VII.	43 39 61.5	60.8	60.1	61.1	62.9	60.1	61.08	27.5562	.5459	. .
	37	Polaris S. P. . . .	5	V.	307 29 60.9	58.6	59.0	57.2	62.3	58.5	59.42	31.0588	.0668	. .
	38	Jupiter, centre . . .	5	III-VII.	44 39 61.1	59.0	60.8	59.4	62.5	58.9	60.28	32.8928	.8923	. .
	39	ζ Virginis	5	III-VII.	38 49 60.7	59.7	61.9	62.0	64.5	60.5	61.55	36.4646	.4615	29.952
	40	η Ursæ Majoris . . .	5	III-VII.	348 54 60.5	60.0	62.9	60.4	62.0	58.0	60.63	32.2262	.2296	. .
	41	η Bootis	5	III-VII.	19 49 61.2	59.5	61.0	60.3	62.2	57.7	60.32	33.5110	.5009	. .
	42	50 Cassiopeæ S. P. . .	5	VI-IV.	290 39 61.7	59.1	60.8	58.3	61.8	57.8	59.92	27.5518	.5467	. .
	43	α Draconis	5	III-VII.	333 49 60.4	59.0	61.7	58.9	61.1	57.1	59.70	25.9838	.9717	29.944
	44	Nadir 14h. 11m. . .	5	. .	179 59 60.1	59.5	60.9	59.7	60.6	57.2	59.67	30.3057	.3146	. .
	45	5 Ursæ Minoris . . .	5	IV-VI.	322 34 60.1	57.6	61.9	59.6	61.5	58.6	59.88*d*	28.1994	.2043	29.940
	46	μ Virginis	5	III-VII.	43 59 60.2	59.0	59.2	60.6	61.0	57.9	59.65	36.8202	.8145	. .
	47	ε Bootis	5	III-VII.	11 14 59.9	59.8	61.0	61.5	61.0	57.7	60.15	31.5070	.4959	. .
	48	β Ursæ Minoris . . .	5	IV-VI.	324 9 60.0	58.2	61.3	59.0	61.4	58.0	59.65	27.5360	.5196	.936
28	49	Sun N. L.	4	I-IV.	17 9 61.0	64.9	64.0	66.3	63.7	57.0	62.82	30.7760	.7543	30.222
	50	Sun S. L.	4	VI-IX.	17 39 62.2	66.2	65.0	67.4	65.3	57.7	63.97	27.9248	.9189	. .
	51	Nadir 4h. 38m. . .	5	. .	179 59 61.6	65.9	65.5	67.2	64.5	58.2	63.82*d*	30.4454	.4453	. .
	52	Venus, centre . . .	5	III-VII.	14 14 62.2	65.4	63.1	64.0	65.2	58.8	63.15	32.2846	.2926	30.170
	53	Moon N. L. . . .	5	III-VII.	49 9 62.7	65.0	63.0	67.0	67.3	63.0	64.67	32.7078	.6992	30.152
	54	Jupiter, centre . . .	5	III-VII.	44 34 60.8	62.3	61.1	62.3	64.5	58.3	61.55	33.5438	.5344	. .
	55	Polaris S. P. . . .	5	1.	307 29 60.1	60.8	60.2	60.0	62.7	58.0	60.30	31.1190	.1372	. .
	56	α Virginis	5	III-VII.	49 19 60.4	62.6	61.8	64.1	65.4	60.1	62.40	31.2318	.2455	30.156
	57	η Ursæ Majoris . . .	5	III-VII.	348 54 60.5	62.0	64.5	63.1	63.2	57.0	61.72	32.3076	.3089	. .
	58	η Bootis	5	III-VIII.	19 49 61.0	63.0	62.9	64.1	64.0	57.9	62.15	33.6366	.6207	. .
	59	α Draconis	5	III-VII.	333 49 61.0	62.4	63.8	62.4	63.7	57.8	61.85	26.0968	.0902	30.160
	60	5 Ursæ Minoris . . .	5	III-VII.	322 34 61.1	62.2	63.8	63.8	65.1	58.9	62.48	28.3504	.3269	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
3	64.0	63.2	63.8	63.1	63.1	44	73.2	71.5	73.0	73.0	71.4
14	68.9	67.6	68.4	69.0	67.0	51	70.8	68.4	68.9	70.3	64.0

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	30.3027	— 23.05	+ 19.76	18 59 59.36	+ 19 53 39.89	+ 61.03	Ha.	Omitted wire VI.
64.5	59.9	. . .	1 1.40	2 19.29	67 46 21.32	— 28 52 42.07	66.11		
72.0	68.5	30.3088	— 5 8.94	2 2.09	65 16 54.37	26 23 15.12	83.71		
. .	. .	. . .	+ 1 10.09	2 9.06	66 28 20.55	27 34 41.30	83.40		
. .	. .	. . .	— 3 24.49	+ 2 0.14	64 53 37.35	— 25 59 58.10	+ 82.28		
. .	. .	. . .	22.96	— 1 13.92	307 28 22.29	+ 88 34 43.04	— 55.11		
71.0	66.5	. . .	3 48.74	+ 54.87	44 42 6.00	— 5 48 26.75	. .		
. .	. .	. . .	27.94	1 6.09	49 20 39.30	— 10 27 0.05	+ 74.87		
. .	. .	. . .	3 13.62	+ 45.71	38 47 33.36	+ 0 6 5.89	71.17		
. .	. .	. . .	60.77	— 11.18	348 53 50.13	49 59 49.12	58.45		
. .	. .	. . .	— 1 42.83	+ 20.54	19 48 40.91	19 4 58.34	+ 64.11		
69.5	65.0	. . .	+ 1 25.68	— 2 29.83	290 38 58.90	71 45 19.65	— 51.46		
68.5	63.9	. . .	+ 1 5.40	— 43.63	322 35 22.97	76 18 16.28	+ 49.34		Omitted wires 2 and 4.
. .	. .	30.3509	— 35.62	+ 15.47	18 14 41.32	20 23 8.70		H.	
74.0	85.3	. . .	+ 1 2.12	15.95	18 46 19.79				
76.0	85.5	. . .	— 36.30	+ 11.58	13 39 33.86	25 14 5.39			
74.3	71.0	30.2859	22.38	— 1 13.05	307 28 21.32	+ 88 34 42.07	— 54.98		
. .	. .	. . .	— 24.32	+ 54.13	44 40 27.41	— 5 47 7.24			
. .	. .	. . .	+ 13.82	+ 54.15	44 41 5.57				
74.0	69.7	. . .	— 4.27	— 2 46.39	288 27 5.01	+ 69 33 25.76	— 56.79		
72.2	67.4	. . .	+ 2 17.51	— 27.71	333 51 47.80	65 1 51.45	+ 53.72		
. .	. .	. . .	— 19.64	+ 19.46	18 59 57.64	19 53 41.61	60.59		
71.5	66.3	. . .	+ 1 6.68	— 43.27	322 35 22.86	76 18 16.39	49.03		
. .	. .	. . .	— 37.14	+ 11.26	11 14 34.07	27 39 5.18	54.14		
. .	. .	. . .	+ 1 27.40	— 40.89	324 10 45.41	74 42 53.84	+ 45.88		
70.1	65.0	. . .	— 50.74	— 1 54.99	296 7 11.55	77 13 32.30	— 42.11		
. .	. .	30.2822	49.07	+ 0.24	0 14 13.40	38 39 25.85	— 5.04		
66.1	61.6	. . .	— 11.85	— 1 17.95	306 8 29.42	87 14 50.17	+ 3.67		
75.5	72.6	30.3251	+ 27.16	— 0.16	359 50 27.90	+ 39 3 11.35	64.55	Ha.	
. .	. .	. . .	13.33	— 0.16	359 50 14.07	+ 39 3 25.18	64.55		
.	. .	. . .	+ 1 27.14	+ 53.14	43 42 21.36	— 4 48 42.11	+ 75.36		
. .	. .	. . .	— 23.25	— 1 12.47	307 28 23.70	+ 88 34 44.45	— 54.72		
. .	. .	. . .	1 20.49	+ 53.69	44 39 33.48	— 5 45 54.23			
74.5	70.3	. . .	3 12.40	+ 44.81	38 47 33.96	+ 0 6 5.29	+ 71.07		Barometer and thermometer read at 13h. 34m.
. .	. .	. . .	59.71	— 10.96	348 53 49.96	49 59 49.29	58.01		
. .	. .	. . .	— 1 39.57	+ 20.13	19 48 40.88	19 4 58.37	+ 63.87		
. .	. .	. . .	+ 1 27.11	— 2 26.82	290 39 0.21	71 45 20.96	— 51.03		Omitted wires 4 and 2.
73.5	68.9	. . .	2 16.49	17.45	333 51 48.74	65 1 50.51	+ 53.52		
72.5	68.2	. . .	+ 1 6.49	— 42.82	322 35 23.55	+ 76 18 15.70	48.84		Omitted wires 2 and 4.
. .	. .	. . .	— 3 23.46	+ 53.97	43 57 30.16	— 5 3 50.91	59.73		
. .	. .	. . .	— 36.71	+ 11.14	11 14 34.58	+ 27 39 4.67	53.99		
72.0	67.5	. . .	+ 1 27.96	— 40.46	324 10 47.15	74 42 52.10	+ 45.65		Omitted wires 2 and 4.
68.5	74.8	30.3234	— 13.51	+ 14.80	17 10 4.11	21 27 49.87			
. .	. .	. . .	+ 1 15.39	15.29	17 41 34.65				
72.0	77.3	. . .	— 61.74	+ 12.22	14 14 13.63	+ 24 39 25.62			
70.0	67.2	30.2857	1 15.67	— 26 39.31	48 42 9.69	— 9 48 30.44			
. .	. .	. . .	1 41.86	+ 54.51	44 34 14.20	— 5 40 34.95			
. .	. .	. . .	26.70	— 1 13.79	307 28 19.81	+ 88 34 40.56	— 53.90		
69.0	65.2	. . .	30.09	+ 1 5.98	49 20 38.29	— 10 26 59.04	+ 74.60		
. .	. .	. . .	1 3.43	— 11.15	348 53 47.14	+ 49 59 52.11	56.77		
. .	. .	. . .	— 1 44.56	+ 20.47	19 48 38.06	19 5 1.19	62.97		Omitted wire VI.
68.5	64.5	. . .	+ 2 11.54	— 27.90	333 51 45.49	65 1 53.76	52.15		
. .	. .	. . .	+ 1 1.41	— 43.53	322 35 20.36	+ 76 18 18.89	+ 47.37		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
16–17	Sun	15 49.24
49–50		45.27
21–22	Jupiter	0 19.08

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
May 28	1	Anon. 14h. 29m. 28s.	4	VI–IX.	322 34 61.1	62.2	63.8	63.8	65.1	58.9	62.48	36.3092	.2354	. .
	2	ε Bootis	5	III–VII.	11 14 61.9	64.1	64.1	66.4	64.0	59.0	63.25	31.6740	.6564	. .
	3	β Ursæ Minoris	5	IV–VI.	324 9 60.8	62.1	64.0	63.5	64.1	59.1	62.27	27.6874	.6672	30.152
	4	Nadir 15h. 4m.	5	. .	179 59 60.8	64.8	63.1	67.0	62.7	58.9	62.88*d*	30.3728	.3776	. .
	5	11 Ursæ Minoris	5	IV–VI.	326 34 61.4	64.3	64.6	63.2	63.7	58.3	62.58	30.3418	.3441	. .
	6	γ Ursæ Minoris	5	IV–VI.	" " "	"	"	"	"	"	"	30.3606	.3614	. .
	7	α Coronæ Borealis	5	III–VII.	11 44 62.3	65.4	65.1	67.8	66.0	60.2	64.47	34.5128	.5012	.150
	8	Polaris	5	1–5.	310 19 58.7	64.2	63.7	64.2	61.8	55.1	61.28	30.1524	.1600	30.114
	9	Nadir 1h. 25m.	5	. .	179 59 58.4	65.0	63.7	67.6	60.7	56.1	61.92	30.3695	.3690	. .
29	10	Sun S. L.	4	I–IV.	17 29 57.1	60.8	59.3	62.7	60.7	54.8	59.23	26.6612	.6329	. .
	11	Sun N. L.	4	VI–IX.	16 59 57.0	60.6	59.6	62.1	60.5	55.4	59.20	29.6782	.6595	30.092
	12	Nadir 4h. 35m.	5	. .	179 59 57.4	60.1	60.1	61.0	59.4	55.1	58.85	30.2845	.2817	. .
	13	Venus, centre	5	III–VII.	14 24 57.7	59.7	55.9	58.7	60.8	55.9	58.12	35.7410	.7262	30.200
	14	Jupiter S. L.	5	I–IX.	44 29 57.5	59.6	57.5	61.2	60.3	56.1	58.70	24.8492	.8475	. .
	15	Jupiter N. L.	4	alt.	" " "	"	"	"	"	"	"	26.0262	.0345	. .
	16	Polaris S. P.	3	V–1.	307 29 56.2	56.2	56.3	55.5	58.5	53.9	56.10	31.0310	.0408	29.960
	17	Nadir 13h. 20m.	5	. .	179 59 59.0	61.1	60.3	63.7	60.1	58.5	60.45*d*	30.2751	.2727	. .
	18	Moon N. L.	9	I–IX.	53 39 60.4	62.0	61.5	64.4	63.3	60.1	61.95	31.5987	.5992	29.954
30	19	Sun S. L.	5	V–IX.	17 24 58.8	61.5	60.8	63.5	63.2	57.1	60.82	34.7526	.7009	29.760
	20	Nadir 5h. 2m.	5	. .	179 59 60.4	61.4	61.9	61.5	62.6	58.0	60.97*d*	30.3549	.3610	. .
	21	Venus, centre	4	III–VII.	14 29 61.0	64.4	61.3	63.7	65.0	61.1	62.75	28.8180	.8072	29.704
	22	Moon N. L.	3	III–V.	57 24 60.3	62.0	61.1	64.1	64.6	63.8	62.65	26.0660	.0233	29.694
	23	Nadir 15h. 0m.	5	. .	179 59 60.1	61.0	61.0	61.0	61.9	58.1	60.52*d*	30.3376	.3430	. .
	24	β Libræ	5	III–VII.	47 44 60.7	60.8	59.3	61.9	63.5	60.9	61.18	29.7574	.7482	. .
June 1	25	Nadir 15h. 0m.	5	. .	179 59 57.3	59.8	59.3	63.0	57.8	56.0	58.87*d*	30.2121	.2110	. .
	26	Anon. 15h. 16m. 34s.	2	VI, VII.	343 4 57.8	58.1	59.5	59.4	58.0	55.1	57.98	29.8805	.8420	29.704
	27	Oeltzen, N. 15370	4	V–VIII.	347 49 58.1	59.8	61.6	62.3	58.0	57.3	59.52	31.5608	.5133	. .
	28	Radcliffe 3416	5	III–VII.	358 39 58.2	59.7	61.2	63.6	58.8	56.1	59.60	33.2810	.2863	29.708
	29	α Serpentis	9	I–IX.	31 59 58.5	59.8	58.5	61.9	59.5	56.6	59.13	27.0914	.0972	. .
	30	47 Libræ	9	I–IX.	57 49 57.9	60.0	59.7	63.6	60.1	58.2	59.92	28.6730	.6668	29.704
	31	Weisse XV, 1080	9	I–IX.	37 49 58.5	58.7	59.5	62.2	59.7	56.5	59.18	30.6662	.6520	29.706
	32	Weisse XVI, 20	9	I–IX.	41 59 59.0	61.0	60.3	63.7	61.4	57.8	60.53	32.0064	.0129	. .
	33	Moon S. L.	4	I, III, VIII, IX	61 54 57.8	58.6	58.2	62.3	58.1	56.2	58.53	32.7232	.7247	29.696
	34	Nadir 17h. 8m.	5	. .	179 59 58.0	59.3	60.8	63.0	57.8	54.3	58.87*d*	30.2615	.2593	. .
2	35	Sun N. L.	4	I–IV.	16 24 61.9	65.4	63.8	65.1	63.1	57.3	62.77	28.2195	.2627	29.830
	36	Sun S. L.	4	VI–IX.	16 59 62.2	64.9	64.4	66.2	63.8	58.9	63.40	34.8562	.8019	. .
	37	Nadir 5h. 0m.	5	. .	179 59 61.2	63.3	62.9	64.7	61.8	57.1	61.83*d*	30.3775	.3755	. .
	38	Venus, centre	5	III–VII	14 59 61.1	63.8	61.9	64.0	63.0	58.1	61.98	28.5606	.5459	30.808
	39	12¹ Canum Venat.	3	II–IV.	359 49 61.8	62.0	63.0	65.1	62.6	58.9	62.23	29.4843	.4948	30.832
	40	12² Canum Venat.	5	V–IX.	" " "	"	"	"	"	"	"	29.9972	.9590	. .
	41	Jupiter, centre	9	I–IX.	44 29 61.7	62.1	61.6	64.0	63.5	58.9	61.97	30.7694	.7613	. .
	42	Polaris S. P.	5	V.	307 29 62.0	60.8	61.6	61.8	61.9	59.2	61.22	31.1204	.1310	. .
	43	α Virginis	9	I–IX.	49 19 61.4	61.0	61.7	64.0	64.0	59.9	62.00	31.1229	.1376	30.836
	44	Nadir 13h. 42m.	5	. .	179 59 60.8	62.2	63.3	64.1	62.0	57.1	61.58*d*	30.3024	.3114	. .
3	45	Sun N. L.	4	I–IV.	16 19 60.0	64.3	63.4	67.0	60.5	57.3	63.12	33.1095	.1502	. .
	46	Sun S. L.	4	VI–IX.	16 49 60.6	64.8	63.9	67.2	61.1	57.7	62.55	30.2612	.2233	29.898
	47	Nadir 5h. 0m.	5	. .	179 59 60.2	62.9	63.9	66.1	60.0	56.9	61.67*d*	30.3075	.3050	. .
	48	Venus S. L.	2	I, III.	15 9 60.0	64.7	62.2	65.4	60.5	56.6	61.57	25.9190	.9343	. .
	49	Venus N. L.	2	II, IV.	" " "	"	"	"	"	"	"	26.3185	.3413	29.890
4	50	Sun S. L.	4	I–IV.	16 44 60.1	66.1	63.5	66.9	62.5	55.3	62.40	34.3837	.4184	30.048
	51	Nadir 5h. 13m.	5	. .	179 59 60.7	64.9	63.6	68.6	62.1	57.6	62.92*d*	30.3290	.3258	. .
	52	Venus S. L.	5	I–IX.	15 24 60.9	64.9	61.8	65.4	62.4	56.9	62.05	31.9516	.9428	30.026
	53	Venus N. L.	4	alt.	" " "	"	"	"	"	"	"	32.4245	.4184	. .
	54	Nadir 14h. 22m.	5	. .	179 59 61.1	65.2	65.0	68.0	62.8	57.7	63.30*d*	30.3613	.3669	. .
	55	μ Virginis	5	III–VII.	43 54 61.3	64.9	63.1	67.9	64.0	59.8	63.50	27.3174	.3279	30.050
	56	μ Libræ	5	III–VII.	52 24 62.2	65.4	66.1	69.9	65.9	61.4	65.15	26.1788	.1929	. .
8	57	β Ursæ Minoris	5	IV–VI.	324 9 62.5	64.7	66.0	67.0	64.6	59.9	64.12	27.7840	.7684	30.052
	58	Nadir 14h. 50m.	5	. .	179 59 59.1	66.4	64.0	69.9	60.9	55.9	62.70*d*	30.3298	.3272	. .
	59	Lacaille 6239	5	III–VII.	76 49 58.4	64.0	64.0	69.2	61.8	56.4	62.30	29.8942	.8989	30.030
	60	Lacaille 6267	5	III–VII.	" " "	"	"	"	"	"	"	33.2044	.3208	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
4	67.0	66.6	66.8	66.4	66.5	37	76.1	74.1	75.5	76.0	72.2
9	67.1	65.8	66.0	66.8	65.5	44	72.8	72.3	72.5	72.8	73.4
12	73.4	70.6	71.2	73.0	. .	47	72.8	71.4	71.7	71.7	72.2
20	76.9	78.7	74.8	76.0	68.9	51	70.8	69.8	70.1	70.6	68.1
23	74.9	73.2	74.5	74.8	71.0	54	67.8	67.9	68.1	67.0	68.7
25	73.3	72.0	73.4	72.6	74.0	57	62.9	64.0	62.3	63.0	65.1
34	71.5	71.4	71.4	70.4	73.8						

THERM'S. At.	THERM'S. Ex.	Mic. Zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	. . .	— 3 6.55	— 43.65	322 31 12.28	+ 76 22 26.97	+ 47.14	Ha.	A star of the 7th magnitude.
. .	. .	30.2857	— 42.98	+ 11.33	11 14 31.60	27 39 7.65	52.84		
67.5	62.8	. . .	+ 1 22.10	— 41.15	324 10 43.22	74 42 56.63	44.13		Omitted wires 2 and 4.
. .	. .	. . .	— 1.83	37.71	326 34 23.04	72 19 16.21	40.21		Omitted wires 2 and 4.
. .	. .	. . .	2.37	— 37.71	326 34 22.29	72 19 16.96	39.12		Omitted wires 2 and 4.
66.5	61.5	. . .	— 2 12 17	+ 11.86	11 43 4.16	27 10 35.09	+ 42.57		
64.1	69.2	30.3078	+ 4 63	— 1 6.20	310 18 59.71	88 34 39.54	— 53.75	H.	
. .	.	30.3184	1 55.55	+ 15.01	17 32 9.79	21 37 17.17			
70.8	76.6	. . .	+ 20.65	14.51	17 0 34.36				
79.0	79.5	. . .	— 2 49.55	12.28	14 22 20.85	+ 24 31 18.40			
. .	. .	30.2583.	+ 2 49.64	53.57	44 33 41.91	— 5 39 44.04			
. .	. .	. . .	+ 2 12.43	+ 53.55	44 33 4.68				
71.0	71.3	. . .	— 24.53	— 1 12.55	307 28 19.02	+ 88 34 39.77	— 53.66		
71.2	70.7	. . .	42.04	29 49.91	53 9 30.00	— 14 15 50.75			
73.5	82.0	30.3301	— 2 17.03	— 15 34.10	17 7 9.69	+ 21 46 29.56		Ha.	
75.0	83.9	. . .	+ 47.75	+ 12.05	14 31 2.55	+ 24 22 36.70			Omitted wire V. Observation made through [thick clouds.
75.0	75.0	30.3264	2 14.92	— 32 22.52	56 54 55.05	— 18 1 15.80			Through breaks in dense clouds, but a good observation.
. .	74.0	. . .	+ 18.13	+ 60.46	47 46 19.77	— 8 52 40.52	+ 51.50		
72.8	69.6	30.2531	+ 12.89	— 16.86	343 4 54.01	+ 55 48 45.24	40.47	H.	
. .	. .	.2550	— 39.45	11.97	347 49 8.10	51 4 31.15	40.19		
72.8	68.9	.2588	— 1 34.92	— 1.30	358 38 23.38	40 15 15.87	39.41		
. .	. .	.2610	+ 1 39.19	+ 34.75	32 2 13.07	+ 6 51 26.18	41.92		
72.5	68.2	.2646	+ 50.09	1 28.18	57 52 18.19	— 18 58 38.94	41.77		
72.4	67.9	.2686	— 12.03	43.17	37 50 30.32	+ 1 3 8.93	37.04		
. .	. .	.2705	54.64	+ 50.04	41 59 55.93	— 3 6 16.68	35.83		
71.5	66.3	.2901	1 16.34	— 68 17.59	60 45 24.60	— 21 51 45.35			Observed through clouds.
74.5	78.5	30.3171	+ 1 4.41	+ 13.79	16 26 20.97	+ 22 11 30.24		Ha.	Limb of sun very tremulous.
. .	. .	. . .	— 2 20.61	14.27	16 57 57.06				
78.0	81.6	. . .	+ 55.53	+ 12.59	15 1 10.10	23 52 29.15			Planet exceedingly unsteady.
75.0	69.8	30.2610	24.02	— 0.16	359 50 26.09	39 3 13.16	62.82		
. .	. .	. . .	+ 9.47	— 0.16	359 50 11.54	+ 39 3 27.71	+ 62.82		
. .	. .	. . .	— 15.69	+ 53.53	44 30 39.81	— 5 37 0.56			
. .	. .	. . .	27.28	— 1 12.64	307 28 21.30	+ 88 34 42.05	— 53.26		
74.0	67.5	. . .	27.48	+ 1 4.96	49 20 39.48	— 10 27 0.23	+ 74.48		
. .	. .	30.2517	— 1 30.87	+ 13.95	16 18 46.20	+ 22 19 7.21		H.	
70.1	70.8	. . .	+ 0.90	14.43	16 50 17.88				
. .	. .	. . .	2 15.37	13.03	15 12 29.97	23 41 15.75			
72.7	74.0	. . .	2 2.59	12.96	15 12 17.12				Interrupted by clouds.
69.0	71.2	30.2327	— 2 11.23	— 15 33.54	16 27 17.63	22 26 21.62		Ha.	Limb of sun very tremulous and obscured by passing clouds.
71.5	74.5	. . .	53.62	+ 13.23	15 24 21.66	+ 23 29 25.09			
. .	. .	. . .	— 1 8.53	13.15	15 24 6.67				
68.5	65.4	30.2617	+ 1 31 98	54.47	43 57 29.95	— 5 3 50.70	+ 58.91		
. .	. .	. . .	2 7.57	+ 1 13.47	52 28 26.19	— 13 34 46.94	59.18		
68.5	65.2	. . .	1 18.17	— 40.82	324 10 41.47	+ 74 42 57.78	42.21		Omitted wires 2 and 4.
63.3	58.3	30.2416	+ 10.74	+ 4 0.11	76 54 13.15	— 38 0 33.90	58.44	H.	
. .	. .	. . .	— 1 36.55	+ 3 59.60	76 52 25.35	— 37 58 46.10	+ 56.93		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
10–11	Sun	15′ 47″.72
35–36		48.04
45–46		45.84
48–49	Venus	0 6.43
52–53		7.49
14–15	Jupiter	18.62

OBSERVATIONS WITH THE MURAL CIRCLE.

E.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
					° ′ ″	″	″	″	″	″	″	r.	r.	in.
8	1	Anon. 15h. 16m. 55s.	5	III-VII.	343 4 58.0	63.6	64.9	65.9	61.0	54.7	61.35	30.5416	.5204	. .
	2	Oeltzen N, 15370	5	III-VII.	347 49 57.7	63.8	65.6	66.8	59.2	56.0	61.52	31.6458	.6225	30.022
	3	Radcliffe 3416	5	III-VII.	358 39 58.6	64.1	65.5	69.0	60.6	54.6	62.07	33.4518	.4436	. .
	4	B. A. C. 5264	9	I-IX.	57 49 59.3	65.9	65.0	70.5	63.6	58.6	63.82	28.9024	.9091	30.020
	5	Weisse XV, 1080	9	I-IX.	37 49 60.4	64.8	65.0	69.8	63.1	57.4	63.42	30.8555	.8512	. .
	6	Weisse XVI, 20	9	I-IX.	41 59 61.0	67.5	66.2	71.3	65.7	59.2	65.15	32.1980	.2116	. .
	7	Weisse XVI, 111	5	III-VII.	49 9 60.0	65.8	64.9	70.4	63.5	58.7	63.88	28.0154	.0226	30.016
	8	α Scorpii	9	I-IX.	64 59 60.3	64.3	65.0	69.8	61.7	57.4	63.08	31.9418	.9540	30.012
	9	Nadir 16h. 30m.	5	. .	179 59 59.0	65.9	65.1	70.0	60.9	55.7	62.76*d*	30.3328	.3302	. .
	10	Anon. 16h. 41m. 37s.	3	I, II, IV.	68 54 60.2	65.5	66.3	71.9	62.3	59.0	64.20	36.0533	.0968	. .
	11	Anon. 16h. 42m. 57s.	4	II-V.	“ “ “	“	“	“	“	“	“	27.0125	.0342	. .
	12	Oeltzen S. 16046	3	III-V.	“ “ “	“	“	“	“	“	“	15.0553	.0749	. .
	13	Oeltzen S. 16060	3	V-VII.	“ “ “	“	“	“	“	“	“	17.6243	.6063	. .
	14	Anon. 16h. 47m. 16s.	2	IV, VI.	“ “ “	“	“	“	“	“	“	26.7775	.7710	. .
	15	Anon. 16h. 49m. 14s.	3	III-V.	“ “ “	“	“	“	“	“	“	38.8950	.9055	. .
	16	Anon. 16h. 49m. 43s.	3	V-VII.	“ “ “	“	“	“	“	“	“	38.7430	.7274	. .
	17	Oeltzen S. 16184	5	III-VII.	“ “ “	“	“	“	“	“	“	34.3732	.3832	. .
	18	Anon. 16h. 54m. 36s.	4	III-VII.	“ “ “	“	“	“	“	“	“	44.8775	.8778	. .
	19	Oeltzen S. 16352	5	III-VII.	65 29 60.6	64.9	64.9	71.3	62.7	58.3	62.78	28.9430	.9486	30.002
	20	Oeltzen S. 16420	5	III-VII.	“ “ “	“	“	“	“	“	“	43.2378	.2539	. .
	21	A² Ophiuchi	5	III-VII.	65 14 60.0	63.8	64.0	70.0	61.5	57.7	62.83	29.5754	.5670	30.000
	22	Nadir 18h. 18m.	5	. .	179 59 60.2	67.9	66.3	72.8	61.0	56.4	64.10*d*	30.3688	.3666	. .
	23	α Lyræ	9	I-IX.	0 14 59.9	66.2	66.3	70.8	61.2	56.0	63.40	31.9860	.9732	. .
	24	51 Cephei, S. P.	5	5-1	306 9 58.3	62.6	63.0	65.6	59.2	53.3	60.33	30.7602	.7479	29.988
9	25	Sun N. L.	4	I-IV.	15 39 60.8	68.4	65.1	69.3	66.9	57.8	64.72	28.0887	.1107	29.946
	26	Sun S. L.	4	VI-IX.	16 14 60.8	68.1	64.9	68.0	65.3	57.0	64.02	34.7972	.7561	. .
	27	Nadir 5h. 32m.	5	. .	179 59 59.0	63.1	61.9	65.6	61.0	55.6	61.03*d*	30.2916	.2884	. .
	28	Venus S. L.	5	I-IX	16 29 59.1	63.8	61.0	63.6	63.1	56.1	61.12	26.0234	.0194	29.890
	29	Venus N. L.	4	alt.	“ “ “	“	“	“	“	“	“	26.5215	.5064	. .
	30	86 Virginis	5	III-VII.	50 39 58.1	62.0	59.5	63.1	62.8	59.0	60.75	35.7860	.7790	29.914
	31	Lacaille 5773	5	III-VII.	64 14 58.9	59.8	58.8	63.7	61.0	56.8	59.83	36.4730	.4726	. .
	32	Lacaille 5819	5	III-VII.	73 9 59.1	61.2	59.2	65.1	62.0	58.5	60.85	38.8832	.8863	. .
	33	Lacaille 5872	5	III-VII.	71 29 60.8	63.2	61.0	65.9	64.1	61.8	62.80	35.3540	.3660	. .
	34	Lacaille 5883	5	III-VII.	“ “ “	“	“	“	“	“	“	37.5020	.5001	29.924
	35	Lacaille 5999	5	III-VII.	77 49 61.1	63.5	61.7	65.9	64.9	61.3	63.07	31.2248	.2434	. .
	36	B. A. C. 4865	5	III-VII.	63 45 61.0	62.0	59.8	66.3	62.7	59.8	61.93	33.0198	.0294	. .
	37	B. A. C. 4884	5	III-VII.	“ “ “	“	“	“	“	“	“	26.1794	.1951	29.932
	38	B. A. C. 4985	5	III-VII.	64 44 61.1	61.3	61.3	65.8	63.5	60.7	62.28	39.1566	.1720	. .
	39	β Libræ	3	III, V, VII.	47 44 60.0	61.7	59.4	63.9	63.2	58.8	61.17	29.7453	.7357	. .
	40	Nadir 15h. 21m.	5	. .	179 59 60.0	62.4	61.7	63.4	61.8	56.8	61.02*d*	30.2811	.2910	. .
	41	Lacaille 6495	5	III-VII.	68 59 59.1	62.0	61.0	66.1	62.8	61.0	62.00	35.8498	.8499	29.944
	42	Anon. 15h. 36m. 22s.	4	VI-IX.	“ “ “	“	“	“	“	“	“	18.1158	.1215	. .
	43	ζ Ursæ Minoris	5	III-VII.	320 39 60.0	60.9	61.8	61.2	62.2	56.8	60.48	27.3750	.3441	. .
	44	β¹ Scorpii	6	I-IX.	58 19 60.0	63.1	61.3	66.0	64.6	61.8	62.80	34.3380	.3573	. .
	45	δ Ophiuchi	5	III-VII.	42 14 59.9	63.1	61.0	64.2	64.0	59.5	61.95	33.7610	.7513	. .
	46	B. A. C. 5465	5	III-VII.	65 39 60.3	61.7	61.1	65.0	63.2	58.9	61.70	27.6024	.5932	29.950
12	47	Sun N. L.	4	I-IV.	15 29 60.4	62.8	60.8	63.6	61.2	58.9	61.28	34.1178	.1397	. .
	48	Sun S. L.	4	VI-IX.	15 59 59.0	61.3	60.7	62.2	60.8	57.8	60.30	31.1578	.1374	29.964
	49	Nadir 5h. 40m.	5	. .	179 59 58.3	59.7	59.1	62.2	58.4	57.4	59.18	30.1526	.1532	. .
	50	Venus S. L.	5	I-IX	17 19 62.3	63.0	62.4	64.2	63.9	61.0	62.80	30.8180	.8014	. .
	51	Venus N. L.	4	alt.								31.2582	.2637	29.946
	52	Nadir 15h. 25m	5	. .	179 59 60.2	62.4	63.1	64.4	60.8	57.8	61.45*d*	30.2971	.2943	. .
	53	Oeltzen S. 14904	4	III-VIII.	57 49 60.0	62.7	62.3	66.6	62.2	61.5	62.55	27.2390	.2540	29.996
	54	Weisse XV, 1057	4	I-V.	27 29 60.5	64.3	63.5	67.3	62.6	60.3	63.08	25.5998	.5969	. .
	55	Weisse XV, 1086	5	III-VII.	32 29 60.5	63.8	62.0	66.0	62.6	59.9	62.47	31.0736	.0815	. .
	56	Weisse XVI, 38	9	I-IX.	52 29 59.6	61.9	61.4	65.4	60.5	59.3	61.35	29.6319	.6233	29.990
	57	σ Scorpii	4	VI-IX.	64 4 59.6	61.0	60.2	65.5	59.3	57.7	60.55	25.6045	.5834	. .
	58	α Scorpii	9	I-IX.	64 59 60.0	61.0	61.8	65.5	60.2	58.1	61.10	31.8237	.8281	29.986
	59	B. A. C. 5571	9	I-IX.	63 4 59.5	62.1	60.6	65.0	60.0	58.9	61.02	32.6583	.6541	. .
	60	B. A. C. 5603	4	IV-VII.	67 4 59.8	62.3	62.8	66.9	61.6	60.1	62.25	27.3450	.3520	. .
	61	B. A. C. 5709	5	I-V.	63 39 59.9	61.0	60.6	65.7	60.6	58.1	60.98	21.4285	.4534	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
9	62.4	63.0	61.6	62.0	. .	40	69.2	68.1	69.1	69.2	65.3
22	61.0	62.0	59.8	60.5	64.8	49	76.2	74.1	76.1	75.9	69.8
27	70.8	68.8	70.4	70.3	63.0	52	70.9	70.6	71.8	71.0	72.0

THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	30.2416	— 8.76	— 17.45	343 4 35.14	+ 55 49 4.11	+ 38.58	H.	
62.7	58.0	. . .	43.31	12.38	347 49 5.83	51 4 33.42	39.41		
. .	. .	. . .	— 1 40.41	— 1.37	358 38 20.29	+ 40 15 18.96	37.70		
62.0	57.3	. . .	+ 41.76	+ 1 31.13	57 52 16.71	— 18 58 37.46	42.00		
. .	. .	. . .	— 19.13	44.60	37 50 28.89	+ 1 3 10.36	36.32		
. .	. .	. . .	— 1 1.78	51.67	41 59 55.04	— 3 6 15.79	35.27		
61.5	56.9	. . .	+ 1 9.56	1 6.47	49 12 19.91	10 18 40.66	34.69		
61.2	56.8	. . .	— 53.70	2 2.55	65 1 11.93	26 7 32.68	31.37		
. .	. .	. . .	— 3 3.59	2 27.77	68 54 28.38	30 0 49.13	24.23		
. .	. .	. . .	+ 1 40.55	2 28.37	68 59 13.12	30 5 33.87	23.79		
. .	. .	. . .	7 55.50	2 29.17	69 5 28.87	30 11 49.62	23.31		
. .	. .	. . .	6 36.13	2 29.00	69 4 9.33	30 10 30.08	23.11		
. .	. .	. . .	+ 1 48.79	2 28.43	68 59 21.42	30 5 42.17	22.23		Minutes of R. A. doubtful.
. .	. .	. . .	— 4 31.66	2 27.64	68 53 0.18	29 59 20.93	21.51		
. .	. .	. . .	4 26.08	2 27.65	68 53 5.77	29 59 26.52	21.34		
. .	. .	. . .	2 9.88	2 27.95	68 55 22.27	30 1 43.02	20.70		
. .	. .	. . .	— 7 38.92	2 27.28	68 49 52.56	29 56 13.31	19.53		
60.5	55.5	. . .	+ 40.51	2 5.80	65 32 50.09	26 39 10.84	17.59		Omitted IV.
. .	. .	. . .	— 6 48.01	2 5.10	65 25 20.87	26 31 41.62	16.50		
60.3	55.2	. . .	+ 21.14	2 4.41	65 17 28.38	— 26 23 49.13	+ 15.14		
. .	. .	30.2358	— 54.47	+ 0.24	0 14 9.17	+ 38 39 30.08	— 9.99		
58.8	53.9	. . .	16.05	— 1 18.89	306 8 25.39	87 14 46.14	+ 8.58		
67.0	77.2	30.2556	+ 1 7.25	+ 13.22	15 41 25.19	22 56 28.36		Ha.	
. .	. .	. . .	— 2 21.10	13.68	16 12 56.60				
71.0	81.3	. . .	+ 2 12.82	13.96	16 32 27.90	+ 22 21 19.04			Image very unsteady.
. .	. .	. . .	+ 1 57.55	13.84	16 32 12.51				Planet exceedingly unsteady.
71.0	72.0	30.2585	— 2 53.09	1 7.64	50 38 15.30	— 11 44 36.05	71.53		
. .	. .	. . .	3 14.83	1 54.55	64 13 39.55	25 20 0.30	73.04		
. .	. .	. . .	4 30.50	3 0.90	73 8 31.25	34 14 52.00	73.40		Very faint and unsteady.
. .	. .	. . .	2 40.14	2 44.46	71 30 7.12	32 36 27.87	70.95		
71.0	70.4	. . .	3 47.05	2 44.36	71 29 0.11	32 35 20.86	70.49		Very faint.
. .	. .	. . .	30.88	4 12.46	77 53 44.65	39 0 5.40	67.49		Very faint and unsteady.
. .	. .	. . .	— 1 26.88	1 52.80	63 46 27.85	24 52 48.60	62.33		Double; observed the north preceding which was brightest.
71.0	69.4	. . .	+ 2 7.40	1 53.06	63 50 2.39	24 56 23.14	61.72		
. .	. .	. . .	— 4 39.46	1 57.76	64 42 20.58	25 48 41.33	56.10		
. .	68.1	. . .	+ 16.39	1 1.65	47 46 19.21	8 52 39.96	51.10		
70.0	67.1	. . .	— 2 55.31	2 24.79	68 59 31.48	30 5 52.23	46.99		
. .	. .	. . .	+ 6 20.53	+ 2 25.94	69 8 48.47	— 30 15 9.22	46.59		7th magnitude.
. .	. .	. . .	+ 1 31.38	— 45.99	320 40 45.87	+ 78 12 53.38	29.95		
. .	. .	. . .	— 2 8.51	+ 1 30.75	58 19 25.04	— 19 25 45.79	38.64		Omitted IV, V, and VI.
. .	. .	. . .	— 1 49.51	51.00	42 14 3.44	3 20 24.19	33.88		
69.0	66.4	. . .	+ 1 23.56	2 3.83	65 43 29.09	— 26 49 49.84	33.15		
. .	. .	30.1794	— 2 4.17	12.88	15 28 9.99	+ 23 9 42.43		H.	
75.7	83.1	. . .	30.04	13.39	15 59 43.65				
. .	. .	. . .	19.51	14.67	17 19 57.96	+ 21 33 48.62			
79.5	81.8	. . .	— 34.00	14.51	17 19 43.31				
71.0	66.0	30.2499	+ 1 33.93	1 29.49	57 53 5.97	— 18 59 26.72	43.59		Omitted IV–VII.
. .	. .	.2517	+ 2 25.94	29.43	27 32 58.45	+ 11 20 40.80	37.82		Omitted II.
. .	. .	.2518	— 26.02	35.93	32 30 12.38	+ 6 23 26.87	34.95		
70.5	65.5	.2525	+ 19.72	1 13.42	52 31 34.49	— 13 37 55.24	35.87		
. .	. .	.2536	+ 2 26.42	1 55.82	64 9 22.79	25 15 43.54	34.05		
70.0	65.0	.2543	— 49.35	2 0.40	65 1 12.15	26 7 32.90	31.36		
. .	. .	.2559	— 1 15.20	1 50.67	63 5 36.49	24 11 57.24	26.98		
. .	. .	.2560	+ 1 31.04	2 19.58	67 8 52.87	28 15 13.62	26.15		
. .	. .	.2577	+ 4 36.03	+ 1 54.03	63 46 31.04	— 24 52 51.79	+ 20.58		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
25–26	Sun	15 45.70
47–48		46.83
28–29	Venus	0 7.69
50–51		7.33

DATE.	Number.	OBJECT.	No. o mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
June 12	1	B. A. C. 5711	4	VI-IX.	63 39 59.9	61.0	60.6	65.7	60.6	58.1	60.98	33.4528	.4428	29.980
	2	α Herculis	9	I-IX.	24 19 60.3	62.8	62.5	66.4	61.3	57.4	61.78	29.8206	.8087	29.960
	3	Nadir 17h. 35m.	5	. .	179 59 60.2	63.2	63.8	67.1	60.0	58.0	62.05*d*	30.3313	.3285	. .
	4	δ Ursæ Minoris	5	1-5.	312 19 60.8	62.1	64.2	64.1	61.8	55.8	61.47	33.2016	.2124	29.980
	5	α Lyræ	9	I-IX.	0 14 60.4	64.2	64.8	67.7	61.4	58.1	62.77	32.0224	.0114	. .
	6	51 Cephei S. P.	5	5-1.	306 9 60.3	61.0	62.4	63.3	59.7	56.1	60.47	30.8696	.8688	29.980
15	7	Sun S. L.	4	I-IV.	15 49 59.3	64.5	61.1	65.7	62.3	58.4	61.88	30.3830	.3998	. .
	8	Sun N. L.	4	VI-IX.	15 19 58.7	63.4	59.8	64.1	61.3	57.2	60.75	33.3298	.3068	30.004
	9	Nadir 6h. 30m.	5	. .	179 59 57.7	55.7	57.5	59.0	57.0	55.8	57.12	30.0872	.0875	. .
	10	Venus N. L.	5	I-IX.	18 9 57.8	59.2	57.5	60.0	60.5	57.0	58.67	27.0412	.0388	. .
	11	Venus S. L.	4	alt.								26.5525	.5354	29.934
	12	α Herculis	9	I-IX.	24 19 60.5	59.8	59.8	61.8	61.2	59.2	60.38	29.6682	.6490	29.920
	13	B. A. C. 5878	5	III-VII.	64 39 60.4	59.3	59.6	62.7	60.0	61.4	60.57	28.7152	.7062	. .
	14	α Ophiuchi	9	I-IX.	26 14 60.5	60.8	60.3	61.8	61.1	59.5	60.67	33.3314	.3354	29.918
	15	Nadir 17h. 35m.	5	. .	179 59 59.9	60.4	59.8	62.6	59.2	59.4	60.22*d*	30.1958	.1954	. .
	16	Anon. 18h. 16m. 52s.	5	III-VII.	70 44 59.4	59.3	59.0	62.0	60.3	61.2	60.20	28.9370	.9431	29.918
	17	β Lyræ	5	III-VII.	5 39 59.5	60.2	61.5	61.9	60.1	59.9	60.52	28.0694	.0731	29.924
16	18	Sun S. L.	4	I-IV.	15 49 60.5	63.1	61.6	63.8	61.4	57.2	61.27	34.9307	.9482	30.096
	19	Sun N. L.	4	VI-IX.	15 14 58.2	60.9	59.5	61.2	60.3	55.6	59.28	28.3875	.3545	. .
	20	Nadir 5h. 52m.	5	. .	179 59 60.2	62.5	62.5	63.8	61.0	57.8	61.30*d*	30.3081	.3048	. .
	21	Venus S. L.	5	I-IX.	18 29 60.3	61.5	60.9	63.2	62.6	57.7	61.03	29.8152	.7989	30.064
	22	Venus N. L.	4	alt.	" " "	"	"	"	"	"	"	30.3030	.3074	.
	23	α Bootis	9	I-IX.	18 59 60.3	60.9	61.9	64.0	62.0	57.4	61.08	31.0661	.0667	30.044
	24	B. A. C. 4767	5	III-VII.	63 4 60.7	61.8	60.3	64.1	60.5	60.0	61.23	34.0278	.0377	. .
	25	5 Ursæ Minoris	5	IV-VI.	322 34 61.0	60.2	63.4	62.8	62.0	58.6	61.33	28.3782	.3759	. .
	26	B. A. C. 4854	9	I-IX.	63 19 62.0	61.6	61.5	64.5	62.3	59.6	61.92	36.5507	.5498	30.044
	27	B. A. C. 4910	5	III-VII.	62 19 61.1	61.8	61.5	64.5	61.8	59.9	61.77	36.3836	.3917	. .
	28	β Ursæ Minoris	5	III-VII.	324 9 58.3	58.5	61.0	60.8	59.1	56.7	59.07	27.6900	.6588	30.042
	29	Nadir 15h. 8m.	5	. .	179 59 59.6	62.7	61.6	65.2	59.3	58.1	61.08*d*	30.2399	.2510	. .
	30	11 Ursæ Minoris	5	IV-VI.	326 34 61.9	63.3	64.1	63.2	63.2	69.5	64.20	30.4328	.4271	. .
	31	γ Ursæ Minoris	5	IV-VI.	" " "	"	"	"	"	"	"	30.4690	.4597	30.038
17	32	Sun N. L.	4	I-IV.	15 14 60.9	63.3	62.9	64.2	61.1	58.5	61.82	31.9980	.0199	. .
	33	Sun S. L.	4	VI-IX.	15 44 59.9	61.7	61.8	63.0	60.8	57.9	60.85	29.1145	.0871	29.830
	34	Nadir 6h. 30m.	5	. .	179 59 59.8	59.4	60.2	62.2	58.2	58.1	59.65*d*	30.1570	.1560	. .
	35	Venus S. L.	5	I-IX.	18 49 59.4	57.2	58.4	60.1	60.6	58.3	59.00	31.9482	.9410	. .
	36	Venus N. L.	4	alt.								32.4210	.4163	29.740
	37	Weisse XVI. 38	5	III-VII.	52 29 57.9	54.1	54.1	59.2	55.6	60.0	56.82	29.3170	.3287	29.736
	38	Lacaille 6796	3	III-V.	71 44 57.6	55.4	54.0	59.2	55.3	60.6	57.02	27.0640	.0890	. .
	39	Lacaille 6797	3	VI-VIII.	" " "	"	"	"	"	"	"	29.6517	.6241	. .
	40	Lacaille 6815	4	III-VII.	" " "	"	"	"	"	"	"	32.9728	.9784	. .
	41	α Scorpii	9	I-IX.	64 59 61.7	57.1	58.2	62.5	58.7	62.9	60.18	31.6257	.6226	29.740
	42	Nadir 16h. 30m.	5	. .	179 59 61.2	58.2	59.0	61.5	58.0	61.2	59.85*d*	30.2764	.2737	. .
	43	μ^1 Scorpii	5	I-V.	76 39 60.9	58.1	59.0	63.3	58.8	63.2	60.55	33.1010	.1489	. .
	44	μ^2 Scorpii	5	V-IX.	" " "	"	"	"	"	"	"	36.4196	.4123	29.738
	45	Oeltzen S. 16352	5	III-VII.	65 29 61.7	58.0	57.2	62.6	58.7	62.9	60.18	28.5488	.5421	. .
	46	B. A. C. 5792	5	III-VII.	66 24 61.7	58.4	58.7	63.3	59.6	64.2	60.98	26.5542	.5473	. .
	47	B. A. C. 5796	5	III-VII.	" " "	"	"	"	"	"	"	21.8216	.8193	. .
	48	α Ophiuchi	9	I-IX.	26 14 61.1	60.7	58.9	61.9	59.1	61.2	60.48	33.3116	.3168	29.730
	49	B. A. C. 5983	4	VI-IX.	68 54 60.9	58.0	59.0	64.6	59.0	63.4	60.82	25.1638	.1604	29.730
	50	Lacaille 7695	9	I-IX.	74 54 61.2	59.2	60.1	65.5	59.4	63.5	61.48	32.4160	.4334	. .
	51	Lacaille 7708	4	IV-VII.	" " "	"	"	"	"	"	"	29.0115	.0153	29.730
	52	α Lyræ	9	I-IX.	0 14 62.6	60.3	60.8	64.3	59.1	63.2	61.72	32.0584	.0492	. .
18	53	Sun N. L.	3	I, II, IV.	15 14 60.9	60.0	58.0	61.2	59.0	59.1	59.70	34.9833	.0077	29.740
	54	Sun S. L.	4	VI-IX.	15 44 61.8	61.4	59.2	62.5	61.4	61.1	61.23	32.2432	.2146	. .
	55	Nadir 6h. 11m.	5	. .	179 59 59.4	57.0	57.0	60.0	57.3	58.3	58.17*d*	30.2429	.2399	. .
22	56	Sun N. L.	4	I-IV.	15 9 60.3	64.4	60.9	68.3	58.6	59.0	61.92	29.3770	.4010	. .
	57	Sun S. L.	4	VI-IX.	15 39 59.8	62.8	59.6	66.7	58.2	58.3	60.90	26.4752	.4314	30.004
	58	Nadir 6h. 35m.	5	. .	179 59 59.4	62.7	61.3	67.6	58.4	58.0	61.23*d*	30.2842	.2806	. .
23	59	Sun S. L.	4	I-IV.	15 44 61.3	63.4	60.8	66.9	60.0	59.1	61.92	35.0665	.0933	30.102
	60	Sun N. L.	4	VI-IX.	15 9 60.0	63.0	60.5	66.1	59.0	58.2	61.13	28.4125	.3757	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
3	69.4	68.8	69.8	68.9	71.8	34	80.0	76.9	79.3	79.8	72.6
9	. .	74.6	77.4	78.8	68.8	42	81.2	78.5	81.0	81.3	76.3
15	76.0	74.7	76.5	75.9	73.3	55	86.0	82.0	85.0	86.0	77.5
20	77.6	75.4	76.2	76.8	73.5	58	73.6	72.3	72.5	73.0	71.0
29	74.0	73.3	74.1	72.8	74.5						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
69.5	64.8	30.2577	− 1 39.88	+ 1 53.46	63 40 14.56	− 24 46 35.31	+ 20.50	H.	
69.1	64.3	.2595	+ 14.12	+ 25.58	24 20 41.48	+ 14 32 57.77	+ 13.38		
68.4	63.3	.2672	− 1 32.35	− 1 2.18	312 17 26.94	86 36 12.31	− 5.41		
- -	- -	.2690	54.64	+ 0.24	0 14 8.37	38 39 30.88	− 11.30		
68.2	63.3	.2695	18.83	− 1 17.38	306 8 24.26	87 14 45.01	+ 9.92		
- -	- -	30.1794	6.91	+ 13.12	15 50 8.09	23 19 17.53			
76.3	86.5	. . .	− 1 38.05	12.66	15 18 35.36				
- -	- -	. . .	+ 1 38.47	14.98	18 11 52.12	20 41 39.14			
80.6	90.3	. . .	1 54.25	15.18	18 12 8.10				
77.2	75.1	30.1884	16.91	25.00	24 20 42.29	+ 14 32 56.96	12.67		
- -	- -	. . .	+ 46.47	1 56.28	64 42 43.32	− 25 49 4.07	10.86		
77.0	74.4	. . .	− 1 38.67	27.26	26 13 49.26	+ 12 39 49.99	+ 6.56		
76.1	73.2	. . .	+ 39.04	2 37.38	70 48 16.62	− 31 54 37.37	− 9.14		
75.6	74.0	. . .	1 6.32	5.52	5 41 12.36	+ 33 12 26.89	− 17.12		
76.0	78.6	30.2633	− 2 26.88	13.36	15 47 47.75	23 21 39.37		Ha.	
- -	- -	. . .	+ 59.85	12.88	15 16 12.01				
79.5	81.3	. . .	+ 14.56	15.81	18 30 31.40	20 23 15.93			
- -	- -	. . .	− 1.38	15.59	18 30 15.24				
76.0	70.3	30.2166	26.65	19.27	18 59 53.70	+ 19 53 45.55	+ 56.60		
- -	- -	. . .	− 1 59.80	+ 1 49.61	63 4 51.04	− 24 11 11.79	67.21		
- -	- -	. . .	+ 57.71	− 42.78	322 35 16.26	+ 76 18 22.99	43.06		Omitted 2 and 4.
75.5	70.5	. . .	− 3 18.57	+ 1 50.67	63 18 34.02	− 24 24 54.77	62.97		
- -	- -	. . .	− 3 13.61	+ 1 46.12	62 18 34.28	− 23 24 55.03	60.01		
75.0	70.1	. . .	+ 1 20.19	− 40.40	324 10 38.86	+ 74 43 0.39	39.30		
- -	- -	. . .	− 6.60	37.03	326 34 20.57	72 19 18.68	34.65		Omitted 2 and 4.
74.5	68.6	. . .	7.62	− 37.05	326 34 19.53	72 19 19.72	33.92		
- -	- -	30.1672	− 58.09	+ 12.46	15 14 16.19	23 23 37.34		H.	
78.5	88.5	. . .	+ 33.86	12.92	15 45 47.63				
- -	- -	. . .	− 55.62	15.44	18 49 18.82	+ 20 4 27.99			
84.0	94.7	. . .	− 1 10.52	15.21	18 49 3.69				
81.6	81.5	30.2785	+ 29.75	1 10.61	52 31 37.18	− 13 37 57.93	35.46		
- -	- -	. . .	1 39.97	2 43.11	71 49 20.10	32 55 40.85	35.12		
- -	- -	. . .	+ 20.49	2 42.91	71 48 0.42	32 54 21.17	35.10		
- -	- -	. . .	− 1 24.68	2 42.64	71 46 14.98	32 52 35.73	34.28		
81.2	80.7	. . .	42.17	1 55.87	65 1 13.88	26 7 34.63	31.47		
- -	- -	. . .	1 30.02	3 44.20	76 42 14.73	37 48 35.48	24.46		
81.1	80.4	. . .	− 3 12.34	3 43.71	76 40 31.92	37 46 52.67	24.28		
- -	- -	. . .	+ 54.41	1 58.72	65 32 53.31	26 39 14.06	17.66		
- -	- -	. . .	1 56.95	2 3.98	66 29 1.91	27 35 22.65	16.37		
- -	- -	. . .	+ 4 25.19	2 4.23	66 31 30.40	− 27 37 51.15	15.77		
81.1	80.5	. . .	− 1 35.29	26.77	26 13 51.96	+ 12 39 47.29	6.17		
81.0	80.2	. . .	+ 2 40.44	2 20.28	69 0 1.54	− 30 6 22.29	+ 4.99		
- -	- -	. . .	− 1 7.59	3 19.02	74 57 12.91	36 3 33.66	− 10.80		
80.2	78.1	. . .	+ 39.58	3 19.41	74 59 0.47	− 36 5 21.22	11.56		
- -	- -	. . .	− 55.52	0.24	0 14 6.44	+ 38 39 32.81	− 12.96		
83.5	93.2	30.2983	2 27.65	12.26	15 12 44.31	23 25 10.17		Ha.	Interrupted by clouds. Limb of sun very unsteady.
- -	- -	. . .	− 60.08	12.71	15 44 13.86				
- -	- -	30.2414	+ 26.35	12.89	15 10 41.16	23 27 11.81		H.	
72.0	74.0	. . .	1 59.46	13.36	15 42 13.72				
									Exceedingly difficult.
72.0	76.5	30.2451	− 2 32.00	13.35	15 42 43.27	+ 23 26 41.31		Ha.	
- -	- -	. .	+ 58.61	+ 12.88	15 11 12.62				

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
7–8	Sun	15 46.36
18–19		47.87
32–33		45.72
53–54		44.77
56–57		46.28
59–60		45.32
10–11	Venus	0 7.99
21–22		8.08
35–36		7.56

														in.
51	Anon. 17 [illegible]	4	[illegible]									22.3572	.4095	. .
52	Anon. 17 [illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		34.0638	.1041	29.804
53	B. A. C. 6271		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	61.92		36.6833	.6464	. .
54	B. A. C. 62?5		[illegible]									43.2100	.2268	29.804
55	Lacaille 7823		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.8?		32.2876	.3051	. .
56	B. A. C. [illegible]		[illegible]	[illegible]	[illegible]	[illegible]	65.7	[illegible]	62.0	61.15		33.7140	.7189	. .
57	Lacaille 7831	3	VI-VIII.									27.1320	.1330	29.802
58	Nadir 18h. 50 m.	5		[illegible]	[illegible]	[illegible]	[illegible]	57.4	58.2	59.724		30.1827	.1825	. .
59	Sun N. L.	4	I-IV.	[illegible]	[illegible]	[illegible]	63.2	60.1	60.5	60.92		30.8580	.8669	29.772
60	Sun S. L.	4	VI-IX.	[illegible]	[illegible]	[illegible]	63.1	59.3	59.7	60.17		27.9195	.8873	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
1	73.0	72.0	73.0	73.4	69.1	21	78.5	76.3	77.6	78.5	73.4
5	71.4	70.2	71.1	71.2	67.1	25	76.1	75.2	76.1	75.4	75.2
6	71.5	71.0	71.8	71.6	70.5	28	79.5	77.2	78.9	79.3	75.0
15	73.5	72.2	73.1	73.1	71.6	59	72.6	72.3	72.5	71.9	74.3
17	74.0	73.5	74.3	74.1	73.2						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
								Ha.	Mercury very tremulous and Nadir difficult to determine.
74.5	76.6	30.2451	+ 1 7.20	+ 18.15	20 51 26.93	+ 18 2 21.34			
. .	.	. . . .	+ 49.49	17.82	20 51 8.89				
71.0	76.5	30.2483	— 1 45.27	15 59.27	15 29 16.00	23 24 23.25			Through thick clouds.
72.0	69.8	30.1806	+ 8.66	25.37	24 20 36.71	+ 14 33 2.54	+ 9.90	H.	Observed through clouds.
73.5	72.2	30.2370	— 1 51.84	50.63	42 14 3.02	— 3 20 23.77	31.76	Ha.	
. .	. .	. . . .	— 42.98	+ 1 59.07	65 1 14.62	— 26 7 35.37	31.80		
. .	. .	. . . .	+ 8.00	— 32.44	329 49 39.31	+ 69 3 59.94	15.54		
. .	. .	. . . .	+ 4 16.63	+ 2 1.39	65 26 20.30	— 26 32 41.05	26.83		
. .	. .	. . . .	— 4 46.78	2 0.57	65 17 16.07	26 23 36.82	26.12		
. .	. .	. . . .	+ 7 44.14	1 56.39	64 29 42.15	25 36 2.90	22.94		
73.5	71.6	. . . .	+ 6 49.62	1 56.31	64 28 47.55	— 25 35 8.30	22.87		Seventh magnitude.
									Stopped by clouds.
74.7	72.9	30.2118	— 1 37.77	+ 27.55	26 13 50.28	+ 12 39 48.97	3.26	H.	
74.1	72.6	. . . .	+ 3 14.65	— 33 7.65	56 30 8.65	— 17 36 29.40			Observed through clouds.
77.0	84.2	30.2291	+ 34.76	+ 13.51	16 5 48.75	+ 23 3 34.28		Ha.	Observed through clouds.
. .	. .	. . . .	— 53.35	+ 13.04	15 34 21.19				
76.5	74.4	30.2268	— 1 0.13	— 52.59	316 38 6.66	82 15 32.59	6.93		Omitted wires 2 and 4.
. .	. .	. . . .	+ 14.17	+ 25.22	24 20 40.36	14 32 58.89	9.44		
. .	74.2	. . . .	— 1 37.56	27.47	26 13 51.39	12 39 47.86	3.32		Stopped by clouds.
. .	. .	30.2254	+ 11.36	13.58	16 10 24.52	+ 22 58 59.53		H.	
78.0	83.6	. . . .	— 1 17.25	13.12	15 38 54.92				
74.0	70.6	30.1914	— 1 51.46	50.35	42 14 0.47	— 3 20 21.22	31.11		
. .	. .	. . . .	+ 2 7.11	1 47.22	62 43 54.48	23 50 15.23	34.35		
73.8	70.1	. . . .	— 44.91	1 58.52	65 1 13.98	26 7 34.73	31.99		
. .	. .	. . . .	+ 2 16.40	2 8.82	66 49 26.50	27 55 47.25	30.20		
. .	. .	. . . .	+ 1 25.26	3 35.33	75 50 1.39	36 56 22.14	31.12		
. .	. .	. . . .	— 1 58.74	3 34.47	75 46 36.53	36 52 57.28	30.52		
. .	. .	. . . .	— 6 16.60	3 33.43	75 42 17.63	36 48 38.38	29.89		
. .	. .	. . . .	+ 7 42.21	1 55.84	64 29 38.83	25 35 59.58	23.16		
. .	. .	. . . .	+ 6 46.93	1 55.76	64 28 43.47	25 35 4.22	23.09		
. .	. .	. . . .	— 4 25.88	1 54.82	64 17 29.72	25 23 50.47	22.63		
. .	. .	. . . .	8 17.60	1 55.37	64 23 38.35	25 29 59.10	19.69		
73.0	69.3	. . . .	— 1 15.88	3 11.08	74 1 56.08	35 8 16.83	17.87		
. .	. .	. . . .	+ 10 33.19	3 13.53	74 13 47.60	35 20 8.35	16.97		
. .	. .	. . . .	— 5 19.05	3 10.29	73 57 52.12	35 4 12.87	16.51		
. .	. .	. . . .	+ 2 48.66	3 11.98	74 6 1.52	35 12 22.27	14.64		
. .	. .	. . . .	4 54.70	3 12.41	74 8 7.99	35 14 28.74	14.55		
. .	. .	. . . .	+ 5 38.39	3 12.56	74 8 51.83	35 15 12.58	13.95		
. .	. .	. . . .	— 4 23.66	3 10.52	73 58 47.74	35 5 8.49	12.33		
. .	. .	. . . .	— 4 43.09	3 10.48	73 58 28.27	35 4 49.02	11.28		
. .	. .	. . . .	+ 5 2.10	3 12.50	74 8 15.48	35 14 36.23	9.05		
. .	. .	. . . .	— 1 20.26	3 11.22	74 1 51.84	35 8 12.59	8.13		Following of two.
. .	. .	. . . .	— 4 59.67	3 10.49	73 58 11.70	35 4 32.45	7.83		
. .	. .	. . . .	+ 4 3.99	3 12.33	74 7 17.20	35 13 37.95	6.77		
72.5	68.8	. . . .	— 2 2.67	3 11.09	74 1 9.30	35 7 30.05	+ 6.03		
. .	. .	. . . .	3 22.38	2 18.35	68 13 57.89	29 20 18.64	— 11.43		
71.8	67.7	. . . .	6 48.69	2 18.13	68 10 31.36	29 16 52.11	12.56		
. .	. .	. . . .	1 6.26	4 20.94	78 18 14.56	39 24 35.31	15.68		
. .	. .	. . . .	— 1 50.59	4 30.02	78 42 40.61	39 49 1.36	16.47		
71.5	67.6	. . . .	+ 1 35.90	4 31.34	78 46 8.42	— 39 52 29.17	— 16.46		
77.5	81.2	30.1941	— 21.09	13.52	16 14 53.35	+ 22 22 59.34		Ha.	
. .	. .	. . . .	+ 1 12.32	+ 13.98	16 46 26.47				

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
19–20	Sun	15 43.78
26–27		44.80
59–60		46.56
2–3	Venus	0 9.02

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'st wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
					° ′ ″	″	″	″	″	″	″	r.	r.	in.
1863. July 9	1	Nadir 7h. 28m.	5	. .	179 59 61.9	62.0	61.3	64.8	61.7	61.8	62.25d	30.2696	.2659	. .
	2	δ Ophiuchi	5	III–VII.	42 14 61.6	62.0	60.2	64.5	63.7	63.6	62.60	33.7710	.7619	29.770
	3	α Scorpii	5	III–VII.	64 59 59.0	57.8	57.0	62.8	58.9	60.1	59.27	31.6042	.5947	. .
	4	15 Draconis	5	IV–VI.	329 49 58.9	57.9	59.2	60.5	59.1	59.4	59.17	29.8170	.8055	. .
	5	20 Ophiuchi	5	III–VII.	49 24 59.0	58.8	58.0	62.8	61.5	62.2	60.38	30.4674	.4655	.774
	6	ε Ursæ Minoris	5	I–V.	316 39 59.1	56.6	57.2	58.6	58.8	59.6	58.32	32.1016	.1108	. .
	7	η Ophiuchi	5	III–VII.	54 24 58.9	59.1	57.1	62.2	60.0	59.5	59.47	29.2180	.2325	. .
	8	ξ Ophiuchi	5	III–VII.	59 49 59.0	58.8	58.0	62.1	60.1	62.2	60.03	30.5408	.5337	. .
	9	θ Ophiuchi	4	VI–IX.	63 44 59.0	57.8	56.6	62.9	58.8	60.2	59.22	33.3257	.3177	. .
	10	Nadir 17h. 25m.	5	. .	179 59 60.1	61.4	59.9	64.0	60.0	60.5	60.98d	30.2122	.2237	. .
	11	ω Draconis	5	III–VII.	330 4 59.9	59.1	59.5	61.7	59.1	60.3	59.93	30.6760	.6428	.772
	12	4 Sagittarii	5	III–VII.	62 39 59.0	59.5	57.0	63.1	59.1	61.1	59.80	30.5654	.5572	. .
	13	9 Sagittarii	5	III–VII.	63 14 58.9	59.0	57.0	62.5	58.5	60.7	59.43	33.3204	.3334	. .
	14	γ Sagittarii	5	V–IX.	69 19 59.9	60.2	59.7	64.9	60.7	62.6	61.33	36.9578	.9491	. .
	15	μ^1 Sagittarii	5	III–VII.	59 59 60.2	58.9	59.3	64.1	60.2	62.5	60.87	35.0972	.1098	. .
	16	δ Sagittarii	5	III–VII.	68 44 60.4	61.2	60.0	66.1	60.8	62.9	61.90	31.8672	.8685	. .
	17	λ Sagitarii	5	III–VII.	64 24 61.4	60.8	59.5	65.4	60.6	62.0	61.62	37.3976	.4047	. .
	18	α Lyræ	5	III–VII.	0 14 61.0	61.1	59.4	65.7	60.1	62.0	61.55	32.1522	.1577	.760
11	19	Sun S. L.	4	I–IV.	16 59 58.9	59.5	57.1	62.5	59.5	59.8	59.55	27.7307	.7309	29.960
	20	Sun N. L.	4	VI–IX.	16 29 59.7	60.1	58.1	61.5	59.5	59.9	59.80	30.6585	.6129	. .
	21	Nadir 7h. 47m.	5	. .	179 59 59.2	59.4	57.8	61.5	59.2	59.4	59.42d	30.1871	.1845	. .
15	22	Sun N. L.	3	I, III, & IV.	17 4 60.0	40.4	51.1	49.1	46.1	56.5	50.53	30.5107	.4868	30.042
	23	Sun S. L.	4	VI–IX.	17 34 59.0	38.5	51.9	49.0	34.5	59.7	48.77	27.5527	.5402	. .
	24	Nadir 8h. 16m.	5	. .	179 59 60.9	40.5	51.9	47.6	44.7	56.8	50.40d	29.8054	.8057	. .
	25	ι^1 Scorpii	5	III–VII.	78 54 62.0	42.4	55.9	52.2	48.7	61.0	53.70	33.2924	.3098	30.052
	26	B. A. C. 6127	5	III–VII.	67 19 60.0	40.0	54.1	50.2	46.0	59.0	51.55	30.8438	.8432	30.050
	27	B. A. C. 6343	5	III–VII.	62 29 60.6	39.1	52.2	50.0	46.7	57.9	51.08	32.1212	.1351	. .
	28	B. A. C. 6490	5	III–VII.	63 54 62.0	41.4	53.8	53.0	46.4	58.8	52.57	32.7794	.7738	30.054
	29	B. A. C. 6604	5	III–VII.	63 19 62.3	41.6	53.5	51.0	47.3	59.0	52.45	31.9954	.0037	30.056
	30	B. A. C. 6727	5	III–VII.	62 39 60.8	41.1	53.0	51.7	46.8	58.9	52.05	37.6422	.6318	30.058
	31	Nadir 20h. 14m.	5	. .	179 59 59.4	37.8	53.0	49.5	43.0	56.4	49.86d	29.7815	.7818	. .
18	32	Lacaille 6930	5	III–VII.	71 44 59.3	45.0	52.9	53.6	49.4	57.0	52.87	32.9082	.9128	30.212
	33	Lacaille 7087	5	III–VII.	71 59 58.4	45.4	52.2	53.5	49.9	57.0	52.73	28.9062	.9106	30.216
	34	Lacaille 7244	5	III–VII.	74 39 58.0	45.0	53.0	54.2	49.9	56.0	52.68	35.9064	.9114	30.220
	35	χ Scorpii	5	III–VII.	77 49 58.3	45.0	53.0	54.0	49.1	56.5	52.65	35.1092	.1256	30.216
	36	Lacaille 7629	5	III–VII.	73 29 59.5	45.8	55.0	55.9	50.9	57.5	54.10	33.2176	.2352	30.220
	37	B. A. C. 6283	5	III–VII.	67 44 61.0	47.9	57.0	57.3	52.0	61.1	56.05	31.6060	.5970	30.222
	38	Lacaille 7860	5	III–VII.	72 54 59.0	47.4	54.9	55.9	50.9	56.6	54.12	32.6190	.6106	. .
	39	γ Coronæ Australis	9	I–IX.	76 9 60.2	47.1	56.6	56.5	52.0	58.0	55.07	39.3184	.3339	. .
	40	Lacaille 8318	5	III–VII.	79 14 60.0	48.9	56.5	56.0	51.4	59.0	55.30	43.0690	.0840	. .
	41	β Aquilæ	5	III–VII.	32 49 61.0	49.5	56.9	57.5	54.0	59.4	56.38	32.3476	.3545	. .
	42	α^2 Capricorni	5	III–VII.	51 49 62.0	49.5	56.7	58.3	52.9	61.0	56.73	29.7456	.7364	30.216
	43	Nadir 20h. 45m	5	. .	179 59 60.3	46.8	56.1	56.0	49.0	56.8	54.16d	29.9139	.9130	. .
20	44	Sun N. L.	4	I–IV.	17 54 60.0	45.3	52.3	52.2	51.0	57.0	52.97	27.3662	.3893	30.076
	45	Sun S. L.	4	VI–IX.	18 29 60.7	46.2	54.0	53.6	53.0	58.1	54.27	34.1027	.0777	. .
	46	Nadir 9h. 18m.	5	. .	179 59 60.1	43.6	52.6	50.1	49.5	57.9	52.30d	29.8806	.8799	. .
	47	Anon. 16h. 30m. 0s.	3	IV–VI.	75 39 60.9	45.3	54.0	52.5	51.5	59.5	53.95	17.3857	.3925	29.920
	48	Lacaille 6933	5	III–VII.	" " "	"	"	"	"	"	"	32.2006	.2188	. .
	49	Anon. 16h. 43m. 42s.	5	III–VII.	" " "	"	"	"	"	"	"	36.1854	.2034	. .
	50	Anon. 17h. 6m. 48s.	3	IV–VI.	65 14 59.0	42.4	50.1	49.9	50.3	58.3	51.67	31.9733	.9783	. .
	51	A¹ Ophiuchi	4	VI–IX.	" " "	"	"	"	"	"	"	28.7122	.6765	. .
	52	Anon. 17h. 7m. 53s.	3	VII–IX.	" " "	"	"	"	"	"	"	34.8113	.7781	. .
	53	B. A. C. 5822	4	VI–IX.	" " "	"	"	"	"	"	"	20.0125	.9952	. .
	54	Anon. 17h. 12m. 5s.	3	IV–VI.	" " "	"	"	"	"	"	"	27.9793	.9846	. .
	55	Anon. 17h. 13m. 0s.	3	IV–VI.	" " "	"	"	"	"	"	"	33.2613	.2749	29.914
	56	B. A. C. 5946	9	I–IX.	66 49 60.0	43.7	51.4	50.8	50.7	59.1	52.62	31.6180	.6160	. .
	57	B. A. C. 5981	9	I–IX.	66 39 59.4	44.1	52.0	50.6	50.4	59.0	52.58	29.1398	.1624	. .
	58	B. A. C. 6023	9	I–IX.	63 4 59.0	44.0	50.7	50.1	49.5	58.1	51.90	36.8862	.8941	29.908
	59	Nadir 17h. 55m.	5	. .	179 59 60.3	44.0	52.7	51.0	49.3	58.8	52.68d	29.8704	.8697	. .
	60	μ^1 Sagitarii	5	III–VII.	59 59 60.9	45.8	54.0	51.7	51.7	60.6	54.12	34.8276	.8246	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
1	77.2	76.2	76.3	77.1	73.0	31	76.8	75.5	75.6	76.0	. .
10	75.1	74.2	74.9	74.1	74.5	43	71.5	71.0	70.0	70.0	72.0
21	79.3	77.4	78.8	79.8	74.8	46	78.8	76.2	78.5	79.0	72.7
24	81.9	79.0	80.5	81.0	76.4	59	77.1	76.2	77.2	76.9	74.8

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
76.0	72.1	30.1925	— 1 51.91	+ 50.14	42 14 0.83	— 3 20 21.58	+ 31.03	Ha.	
. .	. .	. . . .	— 43.96	+ 1 57.96	65 1 13.27	— 26 7 34.02	31.98		
. .	. .	. . . .	+ 12.14	— 32.17	329 49 39.14	+ 69 4 0.11	13.30		Omitted wires 2 and 4.
75.5	71.3	. . . .	— 8.56	+ 1 4.56	49 25 56.38	— 10 32 17.13	21.35		
. .	. .	. . . .	— 1 0.14	— 52.28	316 38 5.90	+ 82 15 33.35	5.08		
. .	. .	. . . .	+ 30.10	+ 1 17.33	54 26 46.90	— 15 33 7.65	15.35		
. .	. .	. . . .	— 10.70	1 35.06	59 51 24.39	20 57 45.14	12.64		
. .	. .	. . . .	1 37.98	+ 1 51.77	63 45 13.01	— 24 51 33.76	+ 13.01		
74.5	7.05	. . . .	14.12	— 31.92	330 4 13.89	+ 68 49 25.36	— 4.66		
. .	. .	. . . .	11.44	+ 1 46.84	62 41 35.20	— 23 47 55.95	1.10		
. .	. .	. . . .	1 38.48	1 49.42	63 15 10.37	24 21 31.12	2.56		
. .	. .	. . . .	3 31.84	2 25.39	69 18 54.88	30 25 15.63	2.45		
. .	. .	. . . .	2 34.17	1 35.58	59 59 2.28	21 5 23.03	6.63		
. .	. .	. . . .	52.55	2 21.40	68 46 30.75	29 52 51.50	8.29		
. .	. .	. . . .	3 46.12	1 54.93	64 23 10.43	— 25 29 31.18	11.37		
74.0	70.5	. . . .	— 1 1.61	0.23	0 14 0.17	+ 38 39 39.08	— 19.68		
77.5	85.0	30.2030	+ 1 17.51	14.20	17 1 31.26	+ 22 7 53.28			
. .	. .	. . . .	— 12.85	13.73	16 30 0.68				
79.5	83.0	30.1119	— 11.75	14.35	17 4 53.13	21 33 0.58		R.	
. .	. .	. . . .	+ 1 20.63	14.82	17 36 24.22				
77.0	73.6	30.1052	— 1 40.47	4 34.96	78 57 48.19	— 40 4 8.94	+ 6.49		
77.0	73.0	. . . .	23.14	2 12.47	67 21 40.88	28 28 1.63	— 3.45		
76.5	72.9	. . . .	1 3.64	1 46.51	62 30 33.95	23 36 54.70	15.51		
76.0	72.5	. . . .	1 23.67	1 53.27	63 55 23.17	25 1 43.92	26.13		
. .	72.1	. . . .	1 30.88	1 50.52	63 20 12.09	24 26 32.84	30.68		
. .	72.0	. . . .	3 55.98	1 47.27	62 37 43.34	23 44 4.09	— 37.46		
									July 15. Found end-screw of axis loose; tightened it.
73.0	69.8	30.0993	— 1 28.21	2 48.82	71 46 13.48	32 52 34.23	+ 29.76		
72.0	69.1	. . . .	+ 37.27	2 35.49	72 3 5.49	33 9 26.24	22.64		
. .	69.0	. . . .	— 3 2.23	3 22.02	74 40 12.47	35 46 33.22	15.12		
. .	68.5	. . . .	2 37.59	4 14.70	77 51 29.76	38 57 50.51	+ 8.61		
71.5	67.5	. . . .	1 38.32	3 8.28	73 31 24.06	34 37 44.81	— 5.01		
71.0	67.1	. . . .	46.96	2 17.49	67 46 26.58	28 52 47.33	11.66		
. .	67.0	. . . .	1 18.74	3 1.91	72 56 37.29	34 2 58.04	17.74		
. .	66.6	. . . .	4 49.53	3 44.68	76 8 50.22	37 15 10.97	24.09		
70.5	66.1	. . . .	6 47.11	4 46.86	79 12 55.05	— 40 19 15.80	34.16		
70.0	66.0	. . . .	— 1 10.71	36.62	32 49 22.29	+ 6 4 16.96	42.73		
. .	. .	. . . .	+ 11.38	1 12.15	51 51 20.26	— 12 57 41.01	— 49.66		
77.0	84.6	30.1255	+ 1 25.79	15.11	17 56 33.87	+ 20 41 19.35		Ha.	Sun's limb serrated and very tremulous.
. .	. .	. . . .	— 2 3.91	15.58	18 28 5.94				
78.5	77.0	30.1032	+ 6 38.52	3 33.23	75 50 5.70	— 36 56 26.45	+ 31.91		7th magnitude.
. .	. .	. . . .	— 1 6.33	3 31.32	75 42 18.94	36 48 39.69	29.28		
. .	. .	. . . .	3 11.26	3 30.84	75 40 13.53	36 46 34.28	26.95		8th magnitude.
. .	. .	. . . .	— 58.79	1 58.76	65 15 51.64	26 22 12.39	16.08		8th magnitude.
. .	. .	. . . .	+ 44.73	1 58.92	65 17 35.32	26 23 56.07	16.91		Double. Observed the south one.
. .	. .	. . . .	— 2 26.57	1 58.64	65 14 23.74	26 20 44.49	15.66		8th magnitude.
. .	. .	. . . .	+ 5 16.92	1 59.34	65 22 7.93	26 28 28.68	14.65		
. .	. .	. . . .	+ 1 6.42	1 58.97	65 17 57.06	26 24 17.81	14.14		7th magnitude.
78.0	76.5	. . . .	— 1 39.44	1 58.73	65 15 10.96	26 21 31.71	13.80		8th magnitude.
. .	. .	. . . .	— 47.43	2 7.91	66 51 13.10	27 57 33.85	7.90		
. .	. .	. . . .	+ 29.50	2 7.04	66 42 29.12	27 48 49.87	6.03		
78.0	76.0	. . . .	— 3 32.92	1 47.84	63 3 6.82	24 9 27.57	+ 2.74		
. .	. .	. . . .	— 2 28.03	+ 1 35.09	59 59 1.18	— 21 5 21.93	— 6.65		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
19–20 44–45	Sun	15′ 45″.29 46.04

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
July 20	1	Lacaille 7695	9	I-IX.	74 59 61.0	46.3	54.9	53.8	52.9	60.2	54.85	41.5711	.5748	. .
	2	Lacaille 7708	5	III-VII.	“ “ “	“	“	“	“	“	“	38.0540	.0673	. .
	3	B. A. C. 6305	5	I-V.	71 59 63.0	48.6	55.0	54.5	53.9	63.0	56.33	34.4982	.5326	. .
	4	B. A. C. 6308	4	VI-IX.	“ “ “	“	“	“	“	“	“	40.8665	.8439	. .
	5	B. A. C. 6317	4	VI-IX.	“ “ “	“	“	“	“	“	“	48.3760	.3619	29.902
	6	β Lyræ	3	IV-VI.	5 39 64.5	49.3	58.8	54.4	54.1	61.6	57.12	28.0947	.1024	. .
21	7	Sun S. L.	4	I-IV.	18 39 60.0	46.0	52.8	52.8	50.9	56.5	53.17	31.3970	.4171	29.850
	8	Sun N. L.	4	VI-IX.	18 4 59.0	45.7	53.4	52.3	51.0	57.6	54.83	24.8217	.7808	. .
	9	Nadir 8h. 47m.	3	. .	179 59 59.0	43.0	51.7	50.3	47.8	57.0	51.47*d*	29.8155	.8152	. .
	10	Nadir 16h. 40m.	6	. .	179 59 59.5	44.1	53.9	51.3	48.8	57.3	52.48*d*	29.7822	.7822	. .
	11	B. A C. 5718	5	I-V.	70 49 59.3	45.2	53.5	52.9	50.0	59.8	53.45	35.1198	.1537	. .
	12	B. A. C. 5721	5	V-IX.	“ “ “	“	“	“	“	“	“	26.7176	.7060	29.970
	13	α Herculis	9	I-IX.	24 19 59.4	45.0	53.6	51.6	49.8	56.3	52.62	29.5856	.5673	. .
	14	B. A. C. 5858	7	I-IX.	63 49 59.6	45.0	53.0	53.0	49.5	57.3	52.90	30.9324	.9458	29.968
	15	B. A. C. 5956	5	III-VII.	68 44 61.1	49.0	57.0	57.1	52.9	62.0	56.52	32.1276	.1428	29.972
	16	B. A. C. 6174	5	III-VII.	75 29 61.0	47.6	56.9	56.3	51.5	59.2	55.42	36.2908	.3076	. .
	17	θ Coronæ	9	I-IX.	81 19 60.8	49.1	55.9	55.3	50.8	59.5	55.23	44.8136	.8264	29.974
	18	ζ Aquilæ	5	III-VII.	25 14 61.0	48.5	56.0	55.1	51.1	58.0	54.95	33.3062	.3147	29.982
	19	Nadir 19h. 26m.	5	. .	179 59 60.7	47.2	55.8	55.5	49.1	58.8	54.52	29.9378	.9372	. .
22	20	Anon. 17h. 6m. 47s.	3	IV-VI.	65 14 61.1	47.2	55.2	56.0	52.2	59.3	55.17	32.1433	.1561	30.098
	21	A Ophiuchi	4	VI-IX.	“ “ “	“	“	“	“	“	“	28.8825	.8786	. .
	22	Anon. 17h. 7m. 53s.	3	VII-IX.	“ “ “	“	“	“	“	“	“	34.9857	.9889	. .
	23	B. A. C. 5822	4	VI-IX.	“ “ “	“	“	“	“	“	“	20.1667	.1767	. .
	24	Anon. 17h. 11m. 35s.	5	III-VII	“ “ “	“	“	“	“	“	“	21.5352	.5296	. .
	25	Anon. 17h. 12m. 4s.	4	VI-IX.	“ “ “	“	“	“	“	“	“	28.1435	.1529	. .
	26	Anon. 17h. 13m. 0s.	3	VII-IX.	“ “ “	“	“	“	“	“	“	33.4550	.4517	. .
	27	Nadir 17h. 31m.	5	. .	179 59 60.8	46.0	55.6	54.3	50.0	58.3	54.17*d*	29.9145	.9137	. .
	28	B. A. C. 6023	9	I-IX.	63 4 60.3	48.3	54.8	56.0	51.2	59.0	54.93	37.0610	.0788	30.098
	29	γ Draconis	9	I-IX.	347 24 61.0	47.8	59.0	54.5	52.2	59.1	55.60	33.2473	.2326	. .
	30	μ^1 Sagittarii	9	I-IX.	59 59 60.9	47.3	57.0	56.1	51.4	60.7	55.57	34.9327	.9422	. .
	31	δ Ursæ Minoris	5	1-5.	312 19 60.9	46.2	56.6	52.9	51.4	55.4	53.90	33.1552	.1652	. .
	32	α Lyræ	5	III-VII.	0 14 61.5	49.0	57.3	57.1	51.8	59.0	55.95	31.9822	.9802	. .
	33	51 Cephei S. P.	5	5-1	306 9 60.8	46.6	55.5	52.9	50.3	58.0	54.02	30.8396	.8325	30.090
24	34	γ Draconis	5	III-VII.	347 24 61.0	45.5	57.6	51.1	52.0	60.1	54.55	33.2102	.2131	30.126
	35	Lacaille 7598	5	III-VII.	78 4 59.9	46.0	54.8	53.3	52.1	60.3	54.40	17.6814	.6741	. .
	36	Lacaille 7605	3	VII-IX.	“ “ “	“	“	“	“	“	“	38.7220	.6957	. .
	37	Anon. 18h. 13m. 53s.	9	I-IX.	65 19 59.5	44.3	53.1	51.8	51.0	58.5	53.03	29.5934	.5912	. .
	38	Anon. 18h. 15m. 42s.	3	IV-VI.	“ “ “	“	“	“	“	“	“	25.3113	.3229	. .
	39	Nadir 18h. 26m.	5	. .	179 59 60.2	45.0	53.8	52.0	50.0	58.8	53.30*d*	29.8836	.8828	. .
	40	φ Sagittarii	9	I-IX.	65 59 60.9	45.0	54.9	53.0	52.1	60.5	54.40	31.6275	.6249	. .
	41	ν^1 Sagittarii	9	I-IX.	61 49 61.5	47.2	54.2	53.3	51.5	60.3	54.67	36.9296	.9397	30.112
31	42	Groombridge 3241	5	III-VII.	326 49 52.8	38.2	44.9	46.9	42.1	53.5	46.40	29.6426	.6055	30.100
	43	ω Capricorni	5	III-VII.	66 19 52.2	37.2	43.7	48.7	40.2	54.8	46.13	35.4322	.4363	. .
	44	Nadir 21h. 15m.	5	. .	179 59 51.0	36.4	42.7	47.1	37.4	50.7	44.22*d*	29.4608	.4602	. .
	45	24 Ursæ Majoris S. P.	3	5, 3, & 1	289 19 51.2	35.2	40.5	45.0	37.5	49.2	43.10	25.8837	.8822	30.100
	46	11 Cephei	5	III-VII.	328 14 53.0	38.4	46.3	48.6	41.2	53.0	46.75	33.1106	.0993	. .
	47	79 Draconis	5	III-VII.	325 49 53.1	35.3	44.1	46.5	41.3	53.0	45.55	27.9632	.9414	. .
	48	ι Aquarii	9	I-IX.	53 [illegible] 53.6	39.2	44.5	50.6	41.7	55.2	47.47	31.6457	.6373	. .
	49	Moon N. L.	6	IV-IX.	45 4 51.3	36.7	42.1	48.0	39.1	51.0	44.70	29.2368	.1171	30.104
August 3	50	α Lyræ	5	I-IX.	0 14 61.1	43.9	50.9	53.3	47.4	63.5	53.35	31.8798	.8573	30.204
	51	δ Aquilæ	5	III-VII.	36 4 60.0	44.0	49.0	54.0	48.4	62.0	52.90	35.4092	.4113	30.202
	52	Nadir 19h. 55m.	5	. .	179 59 60.8	44.2	50.4	53.6	45.9	62.0	52.82*d*	29.7591	.7488	. .
6	53	μ^1 Sagittarii	5	III-VII.	59 59 58.3	59.9	58.0	58.0	60.6	63.4	59.70	34.7476	.7396	30.086
	54	B. A. C. 6369	5	III-VII.	64 4 60.0	60.7	57.8	59.7	61.2	62.0	60.23	38.8004	.7962	. .
	55	B. A. C. 6499	5	III-VII.	70 9 60.7	63.4	60.0	61.5	63.1	65.1	62.30	38.2526	.2695	. .
	56	δ Aquilæ	4	III-VII.	36 4 61.7	63.6	61.8	61.2	64.2	63.8	62.72	35.5735	.5676	. .
	57	γ Aquilæ	4	III-VII.	28 34 62.1	64.9	62.4	63.0	65.7	66.0	64.02	28.1225	.1383	30.084
	58	ω Sagittarii	9	I-IX.	65 34 59.5	60.5	58.7	59.1	60.7	61.7	60.03	37.5496	.5498	. .
	59	B. A. C. 6947	9	I-IX.	66 19 60.0	62.0	59.8	60.9	62.0	64.0	61.45	34.4592	.4679	. .
	60	B. A. C. 7057	5	III-VII.	68 29 60.5	64.0	60.5	62.7	62.6	64.5	62.47	39.2392	.2558	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
9	81.5	77.0	79.8	80.1	75.0	39	77.8	76.8	77.8	77.1	76.1
10	76.3	75.6	76.0	76.2	76.2	44	77.3	77.0	77.0	76.4	78.0
19	75.0	73.3	74.0	73.0	76.0	52	84.0	82.0	82.9	83.0	82.5
27	74.0	73.6	73.1	73.9	74.4						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	' "	' "	° ' "	° ' "	"		
. .	. .	30.1032	— 5 59.67	+ 3 21.22	74 57 16.40	— 36 3 37.15	— 8.37	Ha.	
. .	. .	. . .	4 9.70	3 21.65	74 59 6.80	36 5 27.55	9.14		
. .	. .	. . .	2 18.87	2 47.62	72 0 25.08	33 6 45.83	12.17		
. .	. .	. . .	5 36.75	2 47.09	71 57 6.67	33 3 27.42	12.22		
77.5	75.3	. . .	— 9 32.46	2 46.47	71 53 10.34	— 32 59 31.09	12.75		
. .	75.1	. . .	+ 1 2.73	5.50	5 41 5.35	+ 33 12 33.90	— 25.28		
80.0	82.4	30.1873	— 38.56	15.72	18 39 30.33	+ 20 29 54.31		R.	
. .	. .	. . .	+ 2 49.51	15.21	18 7 59.55				
. .	. .	30.0220	— 2 40.89	2 38.15	70 49 58.71	— 31 56 19.46	+ 22.39	H.	
76.6	72.2	. . .	+ 1 43.96	2 38.80	70 54 16.21	— 32 0 36.96	22.20		
. .	. .	. . .	+ 14.25	25.21	24 20 32.08	+ 14 33 7.17	6.30		
76.5	71.3	. . .	— 28.97	1 52.91	63 51 16.84	— 24 57 37.59	2.85		Wires IV and VI omitted.
76.0	71.0	30.1120	1 3.67	2 22.19	68 46 15.04	29 52 35.79	+ 7.96	R.	
75.0	69.9	. . .	3 14.25	3 31.54	75 30 12.71	36 36 33.46	— 4.51		
74.5	69.5	. . .	7 41.34	5 45.10	81 17 58.99	— 42 24 19.74	10.31		
74.0	68.0	. . .	1 40.42	26.44	25 13 40.97	+ 13 39 58.28	— 37.60		
74.0	69.3	30.0997	— 1 4.47	2 1.13	65 15 51.83	— 26 22 12.58	+ 16.02	Ha.	8th magnitude.
. .	. .	. . .	+ 38.29	2 1.29	65 17 34.75	26 23 55.50	15.97		Double. Observed the south one.
. .	. .	. . .	— 2 33.29	2 0.99	65 14 22.87	26 20 43.62	15.64		8th magnitude.
. .	. .	. . .	+ 5 11.12	2 1.70	65 22 7.99	26 28 28.74	15.17		8th magnitude.
. .	. .	. . .	4 28.69	2 1.64	65 21 25.50	26 27 46.25	14.31		9th magnitude.
. .	. .	. . .	+ 1 1.04	2 1.32	65 17 57.53	26 24 18.28	14.11		8th magnitude.
. .	. .	. . .	— 1 45.10	2 1.07	65 15 11.14	26 21 31.89	13.77		9th magnitude.
73.5	68.8	. . .	3 38.82	+ 1 50.02	63 3 6.13	— 24 9 26.88	+ 2.71		
. .	. .	. . .	1 38.23	— 12.60	347 23 4.77	+ 51 30 34.48	— 12.18		
. .	. .	. . .	2 31.82	+ 1 37.08	59 59 0.83	— 21 5 21.58	6.72		
. .	. .	. . .	1 36.11	— 1 1.87	312 17 15.92	+ 86 36 23.33	18.06		
. .	. .	. . .	58.96	+ 0.24	0 13 57.23	38 39 42.02	— 22.48		
72.0	67.0	. . .	22.98	— 1 17.08	306 8 13.96	87 14 34.71	+ 22.47		
79.0	76.5	30.0965	— 1 37.71	— 12.42	347 23 4.42	+ 51 30 34.83	— 12.79		
. .	. .	. . .	+ 6 29.48	+ 4 18.47	78 15 42.35	— 39 22 3.10	2.53		
. .	. .	. . .	— 4 29.61	4 14.65	78 4 39.44	39 11 0.19	2.76		
. .	. .	. . .	+ 15.84	2 0.30	65 22 9.17	26 28 29.92	8.91		8th magnitude.
. .	. .	. . .	+ 2 29.66	2 0.52	65 24 23.21	26 30 43.96	9.58		8–9 magnitude.
. .	. .	. . .	— 47.92	2 4.09	66 1 10.57	27 7 31.32	17.48		
78.0	74.9	. . .	— 3 34.55	+ 1 43.24	61 48 3.36	— 22 54 24.11	21.30		
77.0	73.2	29.9634	+ 11.22	— 36.46	326 49 21.16	+ 72 4 18.09	52.30		Before observing, examined level and found it correct; also adjusted collimation and azimuth.
. .	. .	. . .	— 2 51.59	+ 2 6.20	66 19 0.74	— 27 25 21.49	— 59.88		
77.0	73.5	. . .	+ 2 7.95	— 2 37.14	289 19 13.91	+ 70 25 34.66	+ 56.99		
. .	. .	. . .	— 1 38.32	34.56	328 12 33.87	70 41 5.38	— 62.35		August 5. Turned the circle till microscope A read 180° 0' 0", and then adjusted the other microscopes till each one of them read 0" as nearly as possible.
. .	. .	. . .	+ 1 3.39	— 37.86	325 50 11.08	+ 73 3 28.17	63.18		
. .	. .	. . .	— 52.48	+ 1 15.03	53 25 10.02	— 14 31 30.77	76.88		
76.5	72.7	. . .	+ 26.53	— 25 15.54	44 39 55.69	— 5 46 16.44			
84.5	81.2	29.9778	— 58.93	+ 0.22	0 13 54.64	+ 38 39 44.61	25.55	R.	
84.0	80.4	. . .	2 50.36	40.16	36 2 42.70	+ 2 50 56.55	35.96		
83.0	78.9	29.8085	2 34.61	1 35.08	59 59 0.17	— 21 5 20.92	6.77		
. .	. .	. . .	4 41.80	1 52.67	64 2 11.10	25 8 31.85	17.18		
. .	. .	29.8085	4 25.27	2 31.20	70 8 8.23	— 31 14 28.98	23.03		
. .	. .	. . .	— 3 0.57	40.20	36 2 42.35	+ 2 50 56.90	36.38		Wire IV omitted.
81.5	77.0	. . .	+ 52.37	30.18	28 36 26.57	+ 10 17 12.68	43.30		Wire IV omitted.
. .	. .	. . .	— 4 2.71	2 0.92	65 32 58.24	— 26 39 18.99	42.07		Wire IV omitted.
. .	. .	. . .	2 26.09	2 5.41	66 19 40.77	27 26 1.52	48.36		Wire IV omitted.
. .	. .	. . .	— 4 56.20	+ 2 19.08	68 27 25.35	— 29 33 46.10	— 53.65		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
7–8	Sun	15' 45".39

DATE.	Number.		OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
1863.						° ′ ″	″	″	″	″	″	″	r.	r.	in.
August 6	1		Lacaille 8596 . . .	5	III–VII.	68 49 59.6	62.0	59.8	61.0	61.2	63.0	61.10	34.1038	.1182	30.060
	2		Nadir 21h. 27m. . .	5	. .	179 59 60.6	62.6	61.6	60.7	60.0	61.5	61.17*d*	29.8467	.8458	. .
8	3	λ	Sagittarii	5	III–VII.	64 24 61.5	63.0	60.1	61.7	61.2	63.0	61.75	36.9750	.9823	29.970
	4		B. A. C. 6396 . . .	5	III–VII.	66 9 60.0	62.0	59.4	60.9	61.5	63.0	61.13	33.7680	.7622	. .
	5		B. A. C. 6408 . . .	5	III–VII.	" " "	"	"	"	"	"	"	28.6812	.6717	. .
	6		Lacaille 8049 . . .	5	III–VII.	72 59 60.4	64.1	59.9	62.5	61.7	63.0	61.93	42.8034	.8010	. .
	7		Anon. 19h. 41m. 43s. .	6	III–VII.	49 9 61.2	66.0	61.6	63.0	64.9	66.0	63.78	26.9022	.9027	. .
	8		B. A. C. 6887 . . .	5	III–VII.	68 19 63.4	66.1	64.0	65.0	64.5	66.8	64.97	32.4450	.4482	. .
	9		B. A. C. 7057 . .	5	III–VII.	68 24 63.0	67.4	64.0	65.1	65.0	66.1	65.10	29.7262	.7184	29.994
	10		Nadir 21h. 11m. . .	5	. .	179 59 62.0	64.8	63.9	63.0	62.0	63.5	63.20*d*	29.9146	.9138	. .
10	11	c	Ophiuchi	3	IV–VI.	62 44 61.7	61.9	62.7	59.5	58.2	64.9	61.48	33.5637	.5535	30.082
	12		Lacaille 7417 . . .	5	III–VII.	62 29 61.1	60.8	57.1	58.1	62.2	64.0	60.55	32.4562	.4573	. .
	13		Anon. 17h. 38m. 24s. .	5	III–VII.	" " "	"	"	"	"	"	"	30.8966	.8988	. .
	14		Anon. 17h. 47m. 7s. .	3	IV–VI.	65 39 61.4	60.8	58.5	59.1	63.3	64.5	61.27	18.8350	.8311	. .
	15		B. A. C. 6331 . . .	5	III–VII.	64 39 62.3	63.1	60.3	60.5	64.0	65.2	62.57	34.0898	.1029	30.084
	16		Nadir 18h. 50m. . .	5	. .	179 59 62.0	61.8	61.0	59.4	62.4	64.1	61.78*d*	29.8835	.8829	. .
	17	δ	Aquilæ	5	III–VII.	36 4 61.5	62.6	59.9	59.8	64.9	63.0	61.95	35.5934	.5801	30.086
	18	h¹	Sagittarii	3	III, IV, VI.	63 59 61.8	63.1	61.3	60.9	63.7	64.3	62.52	44.2203	.2256	. .
	19	h²	Sagittarii	3	IV–VII.	" " "	"	"	"	"	"	"	25.0563	.0838	. .
	20		B. A. C. 6755 . . .	3	IV–VI.	71 9 61.5	62.3	59.4	60.2	63.8	65.2	62.07	39.6293	.6175	. .
	21		Lacaille 8214 . . .	3	V–VII.	" " "	"	"	"	"	"	"	36.2597	.2925	. .
	22		B. A. C. 6878 . . .	9	I–IX.	61 54 61.2	62.9	60.6	60.0	64.4	64.8	62.32	38.9288	.9388	. .
	23		B. A. C. 6920 . . .	5	III–VII.	64 34 62.0	63.2	60.8	61.0	63.5	63.6	62.35	34.8822	.8837	. .
	24	a¹	Capricorni	3	IV–VI.	51 49 60.5	62.9	58.3	60.0	64.0	64.6	61.72	33.9160	.9169	. .
	25	a²	Capricorni	3	VI–VIII.	" " "	"	"	"	"	"	"	29.5070	.5352	. .
	26		B. A. C. 7049 . . .	9	I–IX.	61 44 60.6	62.1	59.6	59.4	63.0	63.6	61.38	35.2109	.2325	30.086
11	27		B. A. C. 6401 . . .	5	III–VII.	65 49 61.0	60.4	58.2	58.9	61.7	63.9	60.68	35.8416	.8406	30.042
	28		B. A. C. 6533 . . .	3	III–VII alt.	63 44 60.5	61.4	57.9	61.0	60.0	63.2	60.67	32.3270	.3408	. .
	29		B. A. C. 6628 . . .	9	I–IX.	67 4 60.0	61.7	59.7	59.9	61.6	64.1	61.17	41.4287	.4408	. .
	30	γ	Aquilæ	5	III–VII.	28 34 59.8	62.5	59.4	60.0	63.1	63.9	61.45	28.0754	.0829	. .
	31	β	Aquilæ	5	III–VII.	32 49 60.9	63.8	59.2	59.6	63.7	64.0	61.87	32.3122	.3215	. .
	32		B. A. C. 6899 . . .	9	I–IX.	68 59 60.7	62.5	61.0	61.5	62.0	65.3	62.17	34.1553	.1795	30.048
	33		B. A. C. 7012 . . .	9	I–IX.	65 9 61.8	62.4	60.0	60.4	62.9	61.3	61.47	34.2383	.2612	. .
	34		B. A. C. 7108 . . .	9	I–IX.	64 29 61.6	62.2	60.1	61.0	62.0	62.7	61.60	36.7837	.7852	. .
	35		B. A. C. 7203 . . .	9	I–IX.	66 49 61.6	63.0	62.0	62.0	63.0	65.6	62.87	42.3150	.3363	. .
	36		Lacaille 8691 . . .	5	III–VII.	66 44 62.1	64.0	62.3	62.3	63.1	65.0	63.13	36.7802	.7752	30.040
	37		Nadir 21h. 32m. . .	5	. .	179 59 62.4	63.8	63.1	61.8	61.8	64.8	62.95*d*	29.9296	.9289	. .
12	38		Sun N. L.	4	I–IV.	23 39 64.5	67.0	63.6	63.8	66.6	67.0	65.42	34.8915	.8169	. .
	39		Sun S. L.	4	VI–IX.	24 9 63.4	66.5	62.0	64.0	65.9	65.1	64.48	31.7102	.7576	30.158
	40		Nadir	5	. .	179 59 59.4	60.3	58.7	58.6	59.7	61.2	59.65*d*	29.8161	.8157	. .
14	41		Sun N. L.	4	I–IV.	24 14 61.6	65.3	60.7	62.0	65.1	62.9	62.93	31.8360	.8055	30.158
	42		Sun S. L.	4	VI–IX	24 44 63.8	67.6	62.1	64.9	66.0	64.1	64.75	28.7095	.7095	. .
	43		Nadir 10h. 0m. . . .	5	. .	179 59 59.0	60.1	59.0	58.0	60.0	60.1	59.37*d*	29.7830	.7836	. .
	44		Venus S. L. . . .	4	III, V, VII, IX	43 19 60.0	62.4	56.8	58.3	63.1	62.4	60.50	34.4610	.4616	30.132
	45		Venus N. C. . . .	3	IV, VI, VIII	" " "	"	"	"	"	"	"	35.4273	.4304	. .
	46		Nadir 19h. 32m. . .	5	. .	179 59 59.4	60.7	60.0	58.9	60.3	61.0	60.05*d*	29.8068	.8076	. .
	47	γ	Aquilæ	9	I–IX.	28 34 59.0	62.4	58.6	59.9	63.9	61.9	60.95	28.1114	.1177	30.138
	48	β	Aquilæ	9	I–IX.	32 49 58.6	63.0	58.1	59.2	63.3	61.3	60.58	32.3143	.3220	. .
	49	λ	Ursæ Minoris . . .	5	V.	309 59 58.0	60.0	58.6	55.0	60.1	57.8	58.25	28.6760	.6620	. .
	50	a¹	Capricorni	5	I–V.	51 49 61.1	64.8	59.7	63.0	64.8	64.1	62.92	33.9570	.9606	. .
	51	a²	Capricorni	6	V–IX.	" " "	"	"	"	"	"	"	29.6180	.6125	. .
	52		B. A. C. 7049 . . .	9	I–IX.	61 44 61.3	64.1	60.0	62.2	63.5	64.1	62.53	35.2346	.2561	30.136
15	53		B. A. C. 6321 . . .	5	III–VII.	68 39 60.2	62.9	59.0	61.9	61.2	64.0	61.53	30.9480	.9545	30.128
	54		B. A. C. 6499 . . .	5	III–VII.	70 9 60.2	63.5	59.8	61.2	63.0	64.8	62.08	38.2452	.2621	. .
	55	δ	Aquilæ	5	III–VII.	36 4 60.2	63.5	59.4	61.2	63.7	62.8	61.80	35.6220	.6081	. .
	56		B. A. C. 6694 . . .	5	III–VII.	60 4 59.9	62.5	58.5	60.7	61.0	62.5	60.85	38.0182	.0276	30.130
	57		B. A. C. 6786 . . .	5	III–VII.	65 59 59.1	61.2	59.5	60.0	61.9	62.2	62.32	39.8812	.8830	. .
	58		B. A. C. 6857 . . .	5	III–VII.	67 49 60.2	63.3	60.8	61.9	63.0	65.0	62.37	32.5896	.5810	. .
	59		B. A. C. 6947 . . .	5	III–VII.	66 19 58.0	62.9	60.1	61.4	62.0	64.0	61.40	34.4750	.4748	. .
	60		B. A. C. 7026 . . .	5	III–VII.	68 24 60.0	64.3	61.0	62.3	62.2	64.0	62.30	35.6130	.6039	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
2	80.4	79.6	80.0	79.4	80.3	40	88.9	86.1	87.8	88.0	83.5
10	81.0	80.0	80.5	79.2	82.6	43	84.4	82.9	83.3	84.5	79.2
16	85.8	84.4	85.1	85.4	84.0	46	80.9	80.2	80.4	80.7	80.6
37	85.0	83.0	84.5	84.4	85.0						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	' "	"	° ' "	° ' "	"		
80.5	75.9	29.8085	— 2 15.12	+ 2 21.85	68 50 7.83	— 29 56 28.58	— 59.40	R.	
82.5	78.0	29.8118	3 44.81	1 54.07	64 23 11.01	25 29 31.76	10.92		
. .	78.0	. . . .	— 2 3.86	2 3.67	66 10 0.94	27 16 21.69	18.47		
. .	. .	. . . .	+ 35.74	2 3.93	66 12 40.80	27 19 1.55	19.13		
. .	77.7	. . . .	— 6 47.26	2 56.67	72 56 11.34	34 2 32.09	26.85		
. .	77.5	. . . .	+ 1 31.21	1 3.76	49 12 38.75	10 18 59.50	42.31		Set wrong for γ Aquilæ.
. .	77.1	. . . .	— 1 22.66	2 17.69	68 21 0.00	29 27 20.75	44.89		
81.0	76.9	. . . .	+ 2.92	2 18.51	68 27 26.53	29 33 47.28	— 53.15		
87.0	83.9	29.8261	— 1 56.87	1 45.45	62 44 50.06	23 51 10.81	+ 9.49	Ha.	
. .	. .	. . . .	1 22.50	1 44.39	62 30 22.44	23 36 43.19	4.72		
. .	. .	. . . .	— 33.63	1 44.46	62 31 11.38	23 37 32.13	3.84		9th magnitude.
. .	83.9	. . . .	+ 5 44.73	2 0.66	65 47 46.66	26 54 7.41	+ 1.54		9th magnitude.
86.0	83.6	. . . .	— 2 14.09	1 54.67	64 39 43.15	— 25 46 3.90	— 14.20		
85.5	82.4	. . . .	3 0.41	39.85	36 2 41.39	+ 2 50 57.86	36.97		
. .	. .	. . . .	— 7 31.47	1 51.21	63 54 22.26	— 25 0 43.01	35.92		
. .	. .	. . . .	+ 2 28.69	1 52.03	64 4 23.24	25 10 43.99	36.13		
. .	. .	. . . .	— 5 6.99	2 38.33	71 7 33.41	32 13 54.16	37.72		
. .	. .	. . . .	3 22.74	2 38.58	71 9 17.91	32 15 38.66	37.91		
. .	. .	. . . .	4 45.71	1 42.06	61 51 58.67	22 58 19.42	45.27		
. .	. .	. . . .	2 38.58	1 54.65	64 34 18.42	25 40 39.17	46.94		
. .	. .	. . . .	— 2 8.26	1 9.63	51 49 3.09	12 55 23.84	50.93		
. .	. .	. . . .	+ 9.12	1 9.73	51 51 20.57	12 57 41.32	51.05		
85.0	81.3	. . . .	— 2 49.51	1 41.58	61 43 53.45	22 50 14.20	53.42		
87.0	84.0	29.8348	3 8.31	2 0.55	65 48 52.92	26 55 13.67	18.58	R.	
. .	. .	. . . .	1 18.58	1 50.08	63 45 32.17	24 51 52.92	25.48		
. .	. .	. . . .	— 6 5.57	2 7.78	67 1 3.38	— 28 7 24.13	30.85		
. .	. .	. . . .	+ 54.93	29.82	28 36 26.20	+ 10 17 13.05	44.43		
. .	. .	. . . .	— 1 17.97	35.28	32 49 19.18	+ 6 4 20.07	46.56		
86.0	82.2	. . . .	2 16.21	2 21.15	69 0 7.11	— 30 6 27.86	45.33		
. .	. .	. . . .	2 18.78	1 57.46	65 9 40.15	26 16 0.90	51.38		
. .	. .	. . . .	3 37.92	1 53.91	64 28 17.59	25 34 38.34	55.59		
. .	. .	. . . .	6 31.97	2 6.52	66 45 37.42	27 51 58.17	58.98		
85.0	81.7	. . . .	3 37.60	2 6.33	66 43 31.86	— 27 49 52.61	63.96		
. .	. .	29.8269	2 36.45	20.40	23 37 49.37	+ 15 0 2.13		R.	
86.5	88.4	. . . .	1 0.53	20.93	24 9 24.88				
83.0	87.1	29.8037	— 1 2.77	21.07	24 14 21.23	+ 14 23 28.30		Ha.	
. .	. .	. . . .	+ 34.31	21.61	24 46 0.67				
85.0	87.3	. . . .	— 2 26.04	41.35	43 18 15.81	— 4 24 20.48			
. .	. .	. . . .	— 2 56.41	39.56	43 17 43.65				
81.0	75.5	29.8060	+ 52.93	30.32	28 36 24.20	+ 10 17 15.05	47.43		
. .	. .	. . . .	— 1 18.88	+ 35.87	32 49 17.57	6 4 21.68	46.89		
. .	. .	. . . .	+ 35.87	— 1 6.26	309 59 27.86	+ 88 54 11.39	49.94		All at wire V.
. .	. .	. . . .	— 2 10.25	∓ 1 10.69	51 49 3.36	— 12 55 24.11	50.97		
. .	. .	. . . .	+ 6.07	1 10.79	51 51 19.78	12 57 40.53	51.09		
80.0	74.0	. . . .	— 2 50.88	1 43.18	61 43 54.83	22 50 15.58	53.23		
82.0	78.1	29.8143	35.74	2 20.48	68 41 46.27	29 48 7.02	12.34	R.	
. .	. .	. . . .	4 24.86	2 31.89	70 8 9.11	— 31 14 29.86	22.41		
. .	. .	. . . .	3 1.66	40.33	36 2 40.47	+ 2 50 58.78	37.35		
81.0	76.8	. . . .	4 17.50	1 48.43	63 2 31.78	— 24 8 52.53	34.96		
. .	. .	. . . .	5 15.68	2 3.41	65 56 50.05	27 3 10.80	39.78		
. .	. .	. . . .	1 26.75	2 15.13	67 50 50.75	28 57 11.50	42.88		
. .	. .	. . . .	2 26.12	2 5.70	66 19 40.98	27 26 1.73	47.88		
. .	. .	. . . .	— 3 1.53	+ 2 19.00	68 24 19.77	— 29 30 40.52	— 51.28		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		' "
38–39 41–42	Sun	15 47.75 15 49.72
44–45	Venus	0 16.08

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Aug. 15	1	B. A. C. 7108 . . .	5	III–VII.	64 29 60.1	63.0	60.0	62.2	61.7	62.0	61.50	36.8070	.8033	30.132
	2	B. A. C. 7237 . . .	5	III–VII.	63 9 60.9	64.9	60.2	62.1	62.1	63.1	62.22	31.5730	.5644	. .
	3	Lacaille 8691 . . .	5	III–VII.	66 44 60.1	63.6	61.0	62.1	62.3	63.9	62.17	36.7658	.7599	30.132
	4	Nadir 21h. 36m. . .	5	. .	179 59 60.7	63.5	61.9	62.6	61.2	62.2	62.02	29.8796	.8787	. .
17	5	B. A. C. 6331 . . .	5	III–VII.	64 39 60.5	65.1	61.4	64.4	62.4	62.1	62.65	34.1200	.1342	30.220
	6	α Lyræ	5	III–VII.	0 14 61.6	66.1	63.1	65.6	64.1	62.9	63.90	32.1564	.1620	. .
	7	29 Sagittarii	5	III–VII.	59 24 60.8	66.2	62.1	65.8	65.4	65.2	64.25	38.4662	.4659	. .
	8	β Lyræ	3	IV–VI.	5 39 60.8	66.6	64.1	64.7	63.8	62.9	63.82	28.1757	.1859	. .
	9	ζ Aquilæ	5	III–VII.	25 14 61.2	66.8	61.9	65.1	63.4	61.2	63.27	33.4324	.4307	30.220
	10	Nadir 19h. 8m. . .	5	. .	179 59 61.1	65.2	63.5	64.5	62.1	61.9	63.05*d*	29.8928	.8922	. .
	11	δ Aquilæ	5	III–VII.	36 4 60.3	66.0	62.1	65.0	65.0	61.8	63.37	35.6652	.6510	. .
	12	h^1 Sagittarii	3	IV–VI.	63 59 61.4	65.6	62.7	66.0	63.2	62.0	63.48	44.3640	.3718	. .
	13	h^2 Sagittarii	3	V–VII.	“ “ “	“	“	“	“	“	“	25.1757	.1916	. .
	14	B. A. C. 6755 . . .	3	IV–VI.	71 9 60.9	66.9	62.8	66.2	64.9	64.0	64.28	39.8243	.8201	30.244
	15	B. A. C. 6878 . . .	5	III–VII.	61 54 60.8	66.6	62.5	64.7	64.3	62.7	63.60	39.0318	.0417	. .
	16	B. A. C. 6920 . . .	5	III–VII.	64 34 61.0	67.9	63.2	66.7	64.5	62.3	64.27	35.0390	.0497	. .
	17	B. A. C. 6982 . . .	5	III–VII.	“ “ “	“	“	“	“	“	“	38.9474	.9530	. .
	18	B. A. C. 7012 . . .	5	III–VII.	65 9 61.2	66.7	63.8	66.3	65.0	63.0	64.33	34.4570	.4584	. .
	19	B. A. C. 7069 . . .	5	III–VII.	61 29 60.6	68.0	63.5	65.5	65.0	63.2	64.30	32.8762	.8761	. .
	20	B. A. C. 7113 . . .	5	III–VII.	63 34 60.5	66.7	61.5	65.9	64.3	61.6	63.42	32.5990	.5894	. .
	21	B. A. C. 7133 . . .	5	III–VII.	“ “ “	“	“	“	“	“	“	45.7698	.7637	30.256
18	22	Sun S. L.	4	I–IV.	25 59 60.1	68.3	61.9	66.0	63.1	61.0	63.40	26.9562	.9367	. .
	23	Sun N. L.	3	VI–VIII.	25 29 61.1	69.0	62.9	67.2	64.3	61.3	64.30	30.1437	.1675	30.344
	24	Nadir 10h. 26m. . .	5	. .	179 59 59.8	65.4	62.4	63.3	61.7	60.1	62.12*d*	29.7625	.7633	. .
	25	Venus S. C. . . .	5	I–IX alt.	44 54 60.0	65.0	60.0	63.1	62.4	60.5	61.83	34.9110	.9135	. .
	26	Venus N. L. . . .	4	II–VIII alt.	“ “ “	“	“	“	“	“	“	36.0332	.0417	30.308
	27	Lacaille 7860 . . .	5	III–VII.	72 54 60.7	67.0	62.0	68.0	64.2	62.9	64.13	32.4950	.4940	30.308
	28	ζ Aquilæ	5	III–VII.	25 14 61.5	68.1	63.4	67.0	64.0	62.0	64.33	33.4668	.4616	. .
	29	δ Aquilæ	5	III–VII.	36 4 59.7	66.0	61.5	66.1	64.7	61.1	64.85	35.6528	.6385	. .
	30	B. A. C. 6786 . . .	9	I–IX.	65 59 62.0	67.0	64.0	67.3	65.0	64.0	64.88	40.0696	.0892	. .
	31	B. A. C. 6920 . . .	9	I–IX.	64 34 60.0	66.1	62.9	66.9	63.0	61.9	63.47	35.0196	.0361	30.286
	32	Nadir 20h. 37m. . .	5	. .	179 59 60.2	66.0	63.9	66.1	62.0	61.6	63.30*d*	29.8963	.8954	. .
	33	Lacaille 8740 . . .	9	I–IX.	61 39 60.9	66.9	63.2	67.2	64.1	62.9	64.20	33.8490	.8537	30.284
	34	B. A. C. 7492 . . .	9	I–IX.	62 59 60.1	66.8	61.4	67.3	63.8	61.6	63.50	39.3343	.3526	. .
	35	Lacaille 8918 . . .	5	III–VII.	67 19 60.3	68.3	65.2	68.7	64.5	63.5	65.08	41.7120	.7034	. .
	36	Lacaille 8937 . . .	3	III–VII.	“ “ “	“	“	“	“	“	“	20.0060	.0167	. .
	37	B. A. C. 7694 . . .	5	III–VII.	61 49 61.9	68.2	63.8	68.2	64.7	63.5	65.05	37.8354	.8332	30.268
19	38	Sun S. L.	4	I–IV.	26 19 62.0	68.7	62.7	66.2	65.2	62.5	64.55	28.0754	.0685	30.230
	39	Sun N. L.	4	VI–IX.	25 49 61.9	68.9	63.1	65.6	66.2	62.8	64.75	31.2490	.2658	. .
	40	Nadir 10h. 5m. . . .	5	. .	179 59 61.1	65.0	62.8	63.9	62.9	62.0	62.95*d*	29.9020	.9014	. .
	41	Venus S. C. . . .	5	I–IX alt.	45 14 61.0	65.8	60.5	62.9	65.2	62.2	62.93	29.8044	.7997	30.176
	42	Venus N. L. . . .	4	II–VIII alt.	“ “ “	“	“	“	“	“	“	30.8142	.8093	. .
	43	Lacaille 7417 . . .	5	III–VII.	62 29 61.0	65.2	60.9	63.2	65.0	64.1	63.23	32.6628	.6522	30.186
	44	Anon. 17h. 38m. 25s. .	5	III–VII.	“ “ “	“	“	“	“	“	“	31.0852	.0977	. .
	45	ζ Aquilæ	9	I–IX.	25 14 60.4	66.2	61.2	63.8	64.1	61.3	62.83	33.4439	.4377	30.123
	46	δ Aquilæ	9	I–IX.	36 4 60.5	65.8	62.0	64.0	66.2	62.0	63.42	35.6741	.6594	. .
	47	B. A. C. 6755 . . .	5	III–VII.	71 9 60.5	66.0	61.9	65.0	66.1	64.6	64.02	39.7926	.7891	30.108
	48	Nadir 19h. 53m. . .	5	. .	179 59 60.0	64.3	62.4	63.4	62.9	61.5*d*	62.42	29.8844	.8877	. .
	49	B. A. C. 6982 . . .	9	I–IX.	64 34 61.4	67.5	63.7	65.3	65.9	63.0	64.47	38.9026	.9120	30.108
	50	B. A. C. 7012 . . .	5	III–VII.	65 9 62.1	65.5	63.7	65.7	66.0	64.1	64.52	34.4278	.4321	. .
	51	B A. C. 7069 . . .	5	III–VII.	61 29 61.1	67.0	63.3	64.7	66.1	64.1	64.38	32.8398	.8379	. .
	52	B. A. C. 7113 . . .	9	I–IX.	63 34 62.0	67.5	62.4	66.0	66.1	63.6	64.60	32.5629	.5613	. .
	53	B. A. C. 7133 . . .	3	IV–VI.	“ “ “	“	“	“	“	“	“	45.8130	.8075	30.094
20	54	Sun N. L.	4	I–IV.	26 9 61.0	69.1	63.1	67.0	66.1	63.7	65.00	31.8610	.8334	30.086
	55	Sun S. L.	4	VI–IX.	26 39 62.9	70.6	64.6	68.7	68.4	65.4	66.77	28.6955	.6959	. .
	56	Nadir 10h. 22m. . .	5	. .	179 59 60.0	62.2	60.3	61.1	60.3	61.0	60.82*d*	29.8239	.8234	. .
	57	Venus S. C. . . .	5	I–IX alt.	45 39 60.7	65.7	61.1	63.8	65.4	64.0	63.45	34.9346	.9368	30.010
	58	Venus N. L. . . .	4	II–VIII alt.	“ “ “	“	“	“	“	“	“	36.9967	.0025	. .
	59	B. A. C. 6439 . . .	5	III–VII.	68 19 63.7	67.5	64.1	67.2	67.5	68.8	66.47	41.2278	.2445	29.990
	60	δ Aquilæ	5	III–VII.	36 4 60.5	64.7	61.3	63.2	66.1	62.8	63.10	35.6444	.6302	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
4	80.0	78.9	79.2	79.0	80.1	40	77.6	76.1	76.4	76.6	73.3
10	76.2	76.3	75.5	76.4	80.3	48	74.1	74.1	73.8	73.4	74.5
24	79.8	77.1	77.5	78.5	76.1	56	79.0	76.1	77.5	78.1	72.9
32	74.0	72.4	72.8	71.8	76.0						

IERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
t.	Ex.		Micrometer.	Object.					
:	°	r.	″ ″	′ ″	° ′ ″	° ′ ″	″		
.0	76.0	29.8143	− 3 39.13	+ 1 55.57	64 28 17.94	− 25 34 38.69	− 55.33	R.	
.	. . .	. . . .	54.87	1 49.27	63 10 56.62	24 17 17.37	59.93		
.5	75.6	. . . .	3 37.77	2 8.13	66 43 32.53	27 49 53.28	63.58		
.5	71.1	29.7949	2 16.05	1 57.96	64 39 44.56	− 25 46 5.31	13.84	Ha.	
.	. . .	. . . .	1 14.21	0.25	0 13 49.94	+ 38 39 49.31	28.63		
.	. . .	. . . .	− 4 31.86	1 34.61	59 22 7.00	− 20 28 27.75	19.86		
.	. . .	. . . .	+ 50.44	5.60	5 40 59.86	+ 33 12 39.39	31.84		
.0	70.3	. . . .	− 1 54.00	26.52	25 13 35.79	13 40 3.46	33.26		
.	. . .	. . . .	3 3.61	41.01	36 2 40.77	+ 2 50 58.48	37.52		
.	. . .	. . . .	− 7 37.03	1 54.49	63 54 20.94	− 25 0 41.69	35.16		
.	. . .	. . . .	+ 2 24.32	1 55.34	64 4 23.14	25 10 43.89	35.34		
.0	69.4	. . . .	− 5 14.32	2 43.04	71 7 33.00	32 13 53.75	37.02		
.	. . .	. . . .	4 49.92	1 45.13	61 51 58.81	22 58 19.56	44.89		
.	. . .	. . . .	2 44.76	1 58.11	64 34 17.62	25 40 38.37	46.46		
.	. . .	. . . .	4 47.13	1 57.97	64 32 15.11	25 38 35.86	49.56		
.	. . .	. . . .	2 26.21	2 1.34	65 9 39.46	26 16 0.21	51.01		
.	. . .	. . . .	1 36.61	1 43.70	61 30 11.39	22 36 32.14	53.90		
.	. . .	. . . .	1 27.62	1 53.27	63 35 29.07	24 41 49.82	55.36		
.0	68.3	. . . .	− 8 20.68	1 52.73	63 28 35.47	− 24 34 56.22	56.06		
.	. . .	29.6957	+ 1 26.51	23.60	26 1 53.51	+ 13 7 36.22		R.	
.5	76.9	. . . .	− 14.79	23.04	25 30 12.55				
.	. . .	. . . .	2 43.60	44.41	44 53 2.64	− 5 59 4.73			
.0	80.0	. . . .	2 18.97	42.47	44 52 25.33				
.0	68.1	29.7902	1 24.78	3 2.01	72 56 41.36	− 34 3 2.11	15.53		
.	67.8	. . . .	1 55.10	26.73	25 13 35.96	+ 13 40 3.29	33.41		
.	67.5	. . . .	3 3.36	41.29	36 2 42.78	+ 2 50 56.47	37.64		
.	67.4	. . . .	5 22.90	2 6.26	65 56 48.24	− 27 3 8.99	39.60		
.0	66.8	. . . .	2 44.48	1 57.89	64 34 16.88	25 40 37.63	46.44		
.5	64.5	. . . .	2 7.40	1 45.30	61 39 42.13	22 46 2.88	65.63		
.	64.0	. . . .	4 59.81	1 51.28	62 56 54.97	24 3 15.72	72.12		
.	64.0	. . . .	− 6 13.51	2 15.27	67 16 6.84	28 22 27.59	73.40		
.	. . .	. . . .	+ 5 6.43	2 16.51	67 27 28.02	28 33 48.77	74.07		
.5	63.9	. . . .	− 4 12.16	1 46.03	61 47 38.92	− 22 53 59.67	− 77.69		
.0	80.3	29.8073	+ 54.52	23.66	26 21 22.73	+ 12 48 6.83		Ha.	
.	. . .	. . . .	− 45.73	23.10	25 49 42.12				
.0	82.0	. . . .	+ 0.24	44.42	45 15 47.59				
.	. . .	. . . .	− 31.41	42.43	45 15 13.95	− 6 21 51.52			
.0	71.6	29.8105	1 29.10	1 47.02	62 30 21.15	23 36 41.90	+ 4.84		
.	. . .	. . . .	40.36	1 47.09	62 31 9.96	− 23 37 30.71	+ 3.97		8th magnitude.
.0	69.7	. . . .	1 53.73	26.47	25 13 35.57	+ 13 40 3.68	− 33.57		
.	69.5	. . . .	3 3.38	40.87	36 2 40.91	+ 2 50 58.34	37.74		Very unsteady.
.5	69.4	. . . .	5 12.86	2 42.32	71 7 33.48	− 32 13 54.23	36.91		
.0	69.0	. . . .	4 45.36	1 57.33	64 32 16.44	25 38 37.19	49.51		
.	. . .	. . . .	2 24.90	2 0.65	65 9 40.25	26 16 1.00	50.96		
.	. . .	. . . .	1 34.92	1 43.06	61 30 12.52	22 36 33.27	53.88		Double obs., N. Prec.
.	. . .	. . . .	1 26.25	1 52.56	63 35 30.91	24 41 51.66	55.33		
.5	68.9	. . . .	8 21.56	1 52.00	63 28 35.04	− 24 34 55.79	56.02		
.0	83.9	29.7972	− 63.85	23.10	26 9 24.25	+ 12 28 24.65		R.	
.	. . .	. . . .	+ 34.52	23.66	26 41 4.95				
.5	85.5	. . . .	− 2 41.15	44.25	45 38 6.55	− 6 44 9.57			
.	. . .	. . . .	3 14.56	42.20	45 37 31.09	6 44 9.57			
.5	74.4	29.8042	5 58.68	2 17.90	68 16 25.69	− 29 22 46.44	19.47		
.	73.1	. . . .	− 3 2.67	+ 40.44	36 2 40.87	+ 2 50 58.38	− 37.89		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
22–23	Sun	15 50.48
38–39		15 50.30
54–55		15 50.35
25–26	Venus	0 18.65
41–42		16.82
57–58		17.73

DATE.	Number.	OBJECT.	No. of Mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
					° ′ ″	″	″	″	″	″	″	r.	r.	in.
1863. Aug. 20	1	B. A. C. 6672 . . .	3	IV-VI.	64 54 60.0	63.0	60.6	62.2	64.0	62.8	62.10	34.5287	.5234	. .
	2	B. A. C. 6768 . . .	5	III-VII.	68 24 60.2	65.9	62.0	64.0	65.5	65.5	63.85	38.1210	.1359	. .
	3	B. A. C. 6854 . . .	5	III-VII.	67 49 60.7	65.3	61.8	61.0	65.0	65.6	63.73	32.6258	.6164	29.986
	4	O. S. 20398	5	III-VII.	68 29 60.9	66.3	62.3	65.9	65.8	66.0	64.53	40.4366	.4406	. .
	5	B. A. C. 7011 . . .	5	III-VII.	" " "	"	"	"	"	"	"	45.3520	.3636	. .
	6	B. A. C. 7026 . . .	5	III-VII.	" " "	"	"	"	"	"	"	45.2208	.2375	. .
	7	Nadir 20h. 58m. . .	5	. .	179 59 60.9	61.6	62.1	63.0	63.0	63.9	62.92*d*	29.8982	.8973	
	8	B. A. C. 7419 . . .	5	III-VII.	64 39 61.5	65.9	63.1	64.8	65.1	64.0	64.07	32.8564	.8562	29.988
	9	B. A. C. 7434 . . .	5	III-VII.	" " "	"	"	"	"	"	"	28.1930	.2091	. .
	10	Lacaille 8937 . . .	5	III-VII.	67 24 61.5	67.5	64.5	66.8	66.5	66.7	65.58	29.5354	.5300	. .
	11	η Piscis Australis . .	5	III-VII.	67 54 61.9	66.2	64.3	66.0	67.0	66.6	65.33	25.1196	.1344	. .
	12	Lacaille 9012 . . .	5	III-VII.	" " "	"	"	"	"	"	"	26.4344	.4386	29.984
21	13	Sun N. L.	4	I-IV.	26 29 60.1	69.0	61.3	62.8	67.3	61.5	63.67	32.0032	.9928	29.970
	14	Sun S. L	4	VI-IX.	26 59 61.7	63.6	64.5	69.3	68.8	63.4	65.22	28.7652	.7599	. .
	15	Nadir 10h. 21m. . .	5	. .	179 59 60.5	63.1	59.4	60.3	61.8	62.6	61.28*d*	29.8291	.8291	. .
	16	Venus N. L. . . .	5	I-IX alt.	45 59 60.1	64.9	58.0	60.0	63.7	63.7	62.23	32.3514	.3619	29.954
	17	Venus S. C. . . .	4	II-VIII alt.	" " "	"	"	"	"	"	"	31.3205	.3321	. .
22	18	Sun S. L.	4	I-IV.	27 19 61.0	69.0	62.3	66.1	67.6	66.8	65.47	28.7727	.7479	29.964
	19	Sun N. L.	4	VI-IX.	26 49 64.0	71.9	65.0	68.3	69.8	68.3	67.85	32.0427	.0551	. .
	20	Nadir 10h. 52m. . .	5	. .	179 59 61.6	64.2	61.9	61.0	63.2	65.0	62.82*d*	29.8715	.8706	. .
	21	Venus N. L. . . .	5	I-IX alt.	46 19 60.5	65.0	60.0	61.6	65.0	64.9	62.83	29.8070	.8030	29.956
	22	Venus S. C. . . .	4	II-VIII alt.	" " "	"	"	"	"	"	"	28.7275	.7176	. .
24	23	Lacaille 8214 . . .	5	III-VII.	71 9 62.9	65.1	61.6	63.9	65.3	66.3	64.18	36.3432	.3560	30.106
	24	α Aquilæ	5	III-VII.	30 24 61.1	64.0	61.0	61.1	66.0	65.1	63.05	35.2518	.2630	. .
	25	λ Ursæ Minoris . . .	5	V.	300 59 60.7	62.1	62.0	58.0	63.5	61.9	61.37	28.9066	.9061	. .
	26	An. AR. 20h. 8m. 6s.	5	III-VII.	63 14 60.6	64.1	60.2	61.5	63.0	64.0	60.57	45.9772	.9844	. .
	27	An. AR. 20h. 10m. 50s.	5	III-VII.	" " "	"	"	"	"	"	"	38.2480	.2637	. .
	28	B. A. C. 7081 . . .	5	III-VII.	61 39 61.7	64.2	61.2	62.2	64.2	64.9	63.07	42.9356	.9401	30.100
	29	Nadir 20h. 52m. . .	5	. .	179 59 60.8	63.1	61.8	62.5	62.5	63.0	62.28*d*	29.8767	.8762	. .
26	30	Sun S. L.	4	I-IV.	28 39 61.9	70.2	63.1	71.8	67.5	62.6	66.68	24.7595	.7337	30.150
	31	Sun N. L.	4	VI-IX.	28 9 62.1	71.0	66.5	72.2	67.8	64.3	67.32	27.9717	.9817	. .
	32	Nadir 10h. 45m. . .	5	. .	179 59 60.6	67.9	65.5	69.0	63.0	60.9	64.48*d*	29.9134	.9128	. .
	33	Venus N. L, . . .	5	I-IX alt.	47 39 58.0	64.7	60.6	64.3	61.9	58.8	61.38	29.5302	.5251	30.138
	34	Venus S. C. . . .	4	II-VIII alt.	" " "	"	"	"	"	"	"	28.3505	.3606	. .
27	35	Nadir 10h. 45m. . .	5	. .	179 59 60.1	67.1	64.0	67.3	61.7	59.5	63.28	29.8758	.8750	
	36	χ¹ Sagittarii	5	III-VII.	63 39 61.7	68.3	62.5	70.6	65.0	62.0	65.02	34.1204	.1345	30.090
	37	B. A. C. 6786 . . .	5	III-VII.	65 59 62.1	69.9	65.9	71.0	67.1	64.0	66.67	40.1124	.1266	. .
	38	β Aquilæ	5	III-VII.	32 49 61.5	70.0	64.1	70.1	63.2	63.1	65.83	32.4672	.4631	. .
	39	O. S. 20398 . . .	5	III-VII.	68 29 61.5	70.1	65.1	72.0	66.0	64.0	66.45	40.6140	.6047	. .
	40	B. A. C. 7011 . . .	5	III-VII.	" " "	"	"	"	"	"	"	45.5210	.5169	. .
	41	B. A. C. 7026 . . .	3	IV-VI.	" " "	"	"	"	"	"	"	45.4046	.4118	30.060
	42	Nadir 20h. 50m. . .	5	. .	179 59 60.9	68.9	66.5	70.4	63.2	62.3	65.37*d*	29.8983	.8975	. .
	43	ι Capricorni	5	III-VII.	56 19 62.0	70.8	65.1	67.5	67.6	64.5	66.42	36.1256	.1388	30.042
	44	ι Aquarii	5	III-VII.	53 24 61.9	71.1	65.7	73.0	67.1	64.5	67.22	32.0804	.0914	. .
28	45	Sun N. L.	4	I-IV.	28 54 62.0	70.4	61.1	70.1	69.3	64.0	66.65	33.7895	.7604	29.990
	46	Sun S. L.	4	VI-IX.	29 54 59.6	67.9	62.0	67.3	67.6	62.1	64.42	30.3245	.3461	. .
	47	Nadir 10h. 40m. . .	5	. .	179 59 58.8	64.2	61.0	63.1	61.5	59.0	61.27*d*	29.8098	.8102	. .
	48	Venus S. C. . . .	5	I-IX alt.	48 19 58.0	64.5	59.1	63.2	65.1	62.0	62.15	35.3350	.3480	29.956
	49	Venus N. L. . . .	4	II-VIII alt.	" " "	"	"	"	"	"	"	36.5410	.5338	. .
	50	Lacaille 8174 . . .	5	III-VII.	78 34 59.1	67.0	62.0	63.8	65.8	63.0	63.45	32.9618	.9710	29.940
	51	An. AR. 19h. 37m. 18s.	5	III-VII.	" " "	"	"	"	"	"	"	31.3448	.3590	. .
	52	An. AR. 19h. 48m. 10s.	5	III-VII.	" " "	"	"	"	"	"	"	32.6590	.6514	. .
	53	Lacaille 8309 . . .	5	III-VII.	78 4 59.0	65.3	61.7	63.7	65.5	62.3	63.08	33.8626	.8554	. .
	54	An. AR. 20h. 8m. 06s.	5	III-VII.	63 9 59.9	63.1	60.1	63.0	64.8	62.0	62.65	36.3974	.4044	. .
	55	An. AR. 20h. 10m. 50s.	9	I-IX.	" " "	"	"	"	"	"	"	28.6959	.6925	29.936
	56	B. A. C. 7036 . . .	5	V-IX.	74 49 60.2	67.5	63.3	66.0	67.0	63.2	64.53	24.8002	.7866	. .
	57	An. AR. 20h. 36m. 36s.	5	III-VII.	74 29 60.8	68.0	63.7	65.2	67.6	63.7	65.00	30.8292	.8296	. .
	58	An. AR. 20h. 43m. 17s.	9	I-IX.	56 44 60.0	65.1	61.0	63.9	65.8	62.9	63.12	39.7174	.7119	. .
	59	B. A. C. 7312 . . .	5	III-VII.	58 31 59.8	65.4	62.3	65.1	66.5	64.4	63.92	31.4830	.4806	29.926
	60	ε Pegasi	9	I-IX.	29 39 59.9	66.0	61.4	63.8	66.8	62.1	63.33	34.1466	.1545	29.918
	61	Nadir 21h. 48m. . .	5	. .	179 59 59.4	65.0	62.3	64.0	63.2	61.0	62.48*d*	29.8578	.8571	

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
7	76.1	74.6	75.5	75.0	74.7	15	80.8	77.4	79.2	80.0	74.0
20	84.0	80.1	82.1	83.0	76.5	28	81.3	80.7	81.3	80.8	81.6
31	74.0	73.9	72.3	73.3	78.1	34	71.0	71.0	69.9	70.2	70.1
41	66.0	66.8	65.5	66.0	70.0	46	73.0	71.0	71.1	71.8	67.6
60	70.3	70.3	70.3	70.0	69.4						

	THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
	At.	Ex.		Micrometer.	Object.					
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
1	. .	73. 1	29. 8042	— 2 27. 96	+ 1 57. 96	64 54 32. 10	— 26 0 52. 85	— 33. 22	R.	
2	. .	73. 0	. . .	4 21. 22	2 19. 06	68 23 1. 69	29 29 22. 44	38. 16		
3	72. 0	73. 0	. . .	1 28. 17	2 15. 42	67 50 50. 98	28 57 11. 73	42. 58		
4	. .	. .	. . .	5 33. 48	2 19. 72	68 26 50. 77	29 33 11. 52	48. 93		
5	. .	. .	. . .	8 7. 84	2 19. 42	68 24 16. 11	29 30 36. 86	50. 20		
6	. .	72. 1	. . .	8 3. 88	2 19. 43	68 24 20. 08	29 30 40. 83	50. 95		
7										
8	75. 5	71. 0	. . .	— 1 35. 69	1 57. 15	64 40 25. 53	25 46 46. 28	67. 81		
9	. .	. .	. . .	+ 50. 01	1 57. 36	64 42 51. 44	25 49 12. 19	68. 29		
0	. .	70. 5	. . .	8. 59	2 13. 42	67 27 27. 59	28 33 48. 34	73. 97		
1	. .	. .	. . .	2 26. 41	2 16. 98	67 59 48. 72	29 6 9. 47	76. 12		
2	75. 0	70. 5	. . .	+ 1 45. 53	2 16. 91	67 59 7. 77	— 29 5 28. 52	67. 76		
3	77. 5	87. 6	29. 7883	— 1 9. 12	23. 20	26 29 17. 75	+ 12 8 29. 77		Ha.	
4	. .	. .	. . .	+ 32. 24	23. 76	27 1 1. 22				
5										
6	85. 0	90. 8	. . .	— 1 20. 69	41. 94	45 59 23. 48	— 7 6 1. 43			Very unsteady and ill defined.
7	. .	. .	. . .	— 48. 41	44. 06	45 59 57. 88				
8	81. 5	89. 0	29. 7807	+ 32. 38	24. 03	27 21 1. 88	+ 11 48 28. 30		R.	
9	. .	. .	. . .	— 1 11. 30	23. 48	26 49 20. 03				
0										
1	86. 0	91. 0	. . .	— 0. 70	42. 29	46 20 44. 42				
2	. .	. .	. . .	+ 33. 32	44. 48	46 21 20. 63	7 27 23. 27			
3	83. 0	79. 1	29. 8035	— 3 25. 45	2 39. 60	71 9 18. 33	— 32 15 39. 08	36. 89	Ha.	
4	. .	. .	. . .	— 2 51. 18	+ 32. 34	30 22 44. 21	+ 8 30 55. 04	47. 21		
5	. .	. .	. . .	+ 28. 13	— 1 5. 68	309 59 23. 82	+ 88 54 15. 43	53. 10		All at wire V.
6	. .	. .	. . .	— 8 27. 32	+ 1 48. 38	63 8 21. 63	— 24 14 42. 38	48. 59		8th magnitude.
7	. .	. .	. . .	4 25. 25	1 48. 70	63 12 24. 02	24 18 44. 77	49. 42		8th magnitude.
8	82. 0	78. 5	. . .	— 6 51. 87	1 41. 55	61 34 52. 75	— 22 41 13. 50	54. 24		
9										
0	71. 5	69. 5	29. 7699	+ 2 37. 91	26. 77	28 43 11. 36	+ 10 26 18. 79			
1	. .	. .	. . .	56. 07	26. 17	28 11 29. 56				
2										
3	74. 0	72. 7	. . .	7. 68	46. 19	47 40 55. 25	— 8 47 35. 46			
4	. .	. .	. . .	+ 44. 18	48. 62	47 41 34. 18				
5									R.	This nadir not used.
6	67. 0	61. 0	29. 7262	— 2 18. 21	1 54. 55	63 39 41. 36	24 46 2. 11	31. 21		
7	. .	60. 0	. . .	5 26. 08	2 7. 32	65 56 47. 91	— 27 3 8. 66	39. 22		
8	. .	59. 3	. . .	1 25. 82	36. 96	32 49 16. 97	+ 6 4 22. 28	48. 36		
9	. .	58. 7	. . .	5 41. 07	2 23. 96	68 26 49. 34	— 29 33 10. 09	48. 48		
0	. .	. .	. . .	8 15. 09	2 23. 59	68 24 14. 95	29 30 35. 70	49. 92		
1	65. 0	58. 4	. . .	8 11. 80	2 23. 61	68 24 18. 26	29 30 39. 01	50. 50		
2										
3	64. 0	58. 0	. . .	3 21. 05	1 25. 79	56 18 11. 16	17 24 31. 91	68. 18		Image of wire affected with a slow swinging motion.
4	. .	58. 2	. . .	1 14. 17	1 17. 01	53 25 10. 06	— 14 31 30. 81	77. 87		
5	70. 0	75. 5	29. 7697	2 5. 12	26. 48	28 53 28. 01	+ 9 44 18. 53		Ha.	
6	. .	. .	. . .	18. 07	27. 08	29 25 13. 43				
7										
8	74. 0	77. 6	. . .	2 54. 90	48. 50	48 17 55. 75				
9	. .	. .	. . .	3 32. 08	45. 93	48 17 16. 00	— 9 23 56. 62			
0	72. 0	68. 5	29. 7780	1 40. 11	4 28. 81	78 37 52. 15	39 44 12. 90	32. 09		
1	. .	. .	. . .	49. 57	4 29. 24	78 38 43. 12	39 45 3. 87	34. 44		9th magnitude.
2	. .	. .	. . .	1 30. 09	4 29. 19	78 38 2. 55	39 44 23. 30	38. 23		9th magnitude.
3	. .	. .	. . .	2 8. 15	4 18. 05	78 7 12. 98	39 13 33. 73	40. 52		
4	. .	. .	. . .	— 3 27. 75	1 50. 11	63 8 25. 01	24 14 45. 76	48. 29		9th magnitude.
5	71. 5	67. 6	. . .	+ 34. 03	1 50. 43	63 12 27. 11	24 18 47. 86	49. 15		8th magnitude.
6	. .	. .	. . .	+ 2 36. 49	3 24. 22	74 56 5. 24	36 2 25. 99	49. 65		
7	. .	. .	. . .	— 32. 97	3 19. 01	74 32 51. 04	35 39 11. 79	54. 89		7th magnitude.
8	. .	. .	. . .	5 11. 46	1 25. 01	56 41 16. 67	17 47 37. 42	59. 95		9th magnitude.
9	71. 5	68. 0	. . .	53. 38	1 24. 66	56 35 35. 20	— 17 41 55. 95	63. 71		7½ magnitude.
0	71. 0	68. 1	. . .	— 2 17. 22	+ 31. 85	29 38 17. 96	+ 9 15 21. 29	— 74. 98		
1										

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
13–14	Sun	′ ″ 15 51. 73
18–19		15 50. 92
30–31		15 50. 90
44–45		15 52. 71
16–17	Venus	17. 20
21–22		18. 10
32–33		19. 47
47–48		19. 87

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	
1863.				•	° ′ ″	″	″	″	″	″	″	r.	r.	
Aug. 28	1	Moon N. L. . . .	5	III-VII.	42 24 60.0	66.9	62.0	63.9	67.0	62.8	63.77	28.1938	.2000	29.
31	2	An. AR. 18h. 58m. 29s.	5	III-VII.	47 59 60.0	67.4	61.1	66.2	67.2	62.5	64.07	32.1068	.1181	30.
	3	δ Aquilæ	5	III-VII.	36 4 61.5	69.4	64.0	68.5	68.4	62.8	65.77	35.8028	.7949	.
	4	Lacaille 8174 . . .	5	III-VII.	78 34 59.0	68.9	63.3	67.0	66.0	62.8	64.50	33.2568	.2753	30.
	5	An. AR. 19h. 37m. 18s.	3	III-VI.	" " "	"	"	"	"	"	"	31.6220	.6110	.
	6	An. AR. 19h. 48m. 10s.	5	III-VII.	" " "	"	"	"	"	"	"	32.9104	.9165	.
	7	Lacaille 8309 . . .	5	III-VII.	78 4 59.1	68.8	62.8	66.7	66.1	62.0	64.25	34.1940	.2126	.
	8	An. AR. 19h. 59m. 33s.	5	III-VII.	63 9 60.0	69.1	62.3	67.4	65.5	63.0	64.55	33.9366	.9414	30.
	9	An. AR. 20h. 8m. 6s.	5	III-VII.	" " "	"	"	"	"	"	"	36.5742	.5655	.
	10	An. AR. 20h. 10m. 49s.	5	III-VII.	" " "	"	"	"	"	"	"	28.8918	.8942	.
	11	B. A. C. 7036 . . .	5	III-VII.	74 49 60.1	69.6	64.2	69.0	67.0	62.3	65.37	25.0004	.0110	.
	12	Lacaille 8513 . . .	5	III-VII.	75 4 61.5	70.0	66.3	71.0	68.6	64.0	66.90	27.0660	.0799	.
	13	An. AR. 20h. 36m. 3s.	3	IV-VI.	75 9 62.1	70.8	66.5	71.5	68.3	64.6	67.30	32.0743	.0853	.
	14	An. AR. 20h. 43m. 17s.	3	V-VII.	56 34 63.7	71.8	66.6	72.7	70.0	67.5	68.72	20.8240	.8200	.
	15	B. A. C. 7312 . . .	5	III-VII.	" " "	"	"	"	"	"	"	31.7300	.7206	.
	16	An. AR. 20h. 58m. 18s.	3	IV-VI.	" " "	"	"	"	"	"	"	23.7147	.7031	30.
	17	Nadir 21h. 8m. . .	5	. .	179 59 60.0	68.5	65.3	68.2	65.1	61.1	64.70*d*	29.9045	.9037	.
Sept. 1	18	Sun N. L.	4	I-IV.	30 19 61.0	69.6	64.0	67.7	69.0	64.5	65.97	31.9487	.9390	.
	19	Sun S. L.	4	VI-IX	30 49 62.0	70.0	64.6	67.3	69.0	65.8	66.45	28.4942	.4980	30.
	20	Nadir 11h. 8m. . . .	5	. .	179 59 59.5	64.8	61.4	62.9	63.0	60.6	62.03*d*	29.8289	.8284	.
	21	Venus N. L. . . .	3	I-V.	49 19 59.5	67.0	61.9	65.0	67.4	65.0	64.47	29.0010	.0123	30.
	22	Venus S. C. . . .	3	II-VI.	" " "	"	"	"	"	"	"	27.6467	.6365	.
	23	δ Aquilæ	5	III-VII.	36 4 60.5	66.2	62.0	65.6	66.9	62.4	63.93	35.6192	.6053	30.
	24	Lacaille 8174 . . .	5	III-VII.	78 34 60.6	69.5	64.5	66.1	67.3	65.2	65.53	33.1958	.2146	.
	25	An. AR. 19h. 47m. 34s.	5	III-VII.	" " "	"	"	"	"	"	"	32.8378	.8390	.
	26	O. S. 21445 . . .	5	III-VII.	63 9 62.0	69.0	63.2	67.2	67.1	65.0	65.58	33.9414	.9465	.
	27	An. AR. 20h. 8m. 6s. .	5	III-VII.	" " "	"	"	"	"	"	"	36.5732	.5646	.
	28	O. S. 20384 . . .	5	III-VII.	" " "	"	"	"	"	"	"	28.8360	.8341	30.
	29	An. AR 20h. 43m. 10s.	5	III-VII.	56 44 62.0	68.5	64.9	68.1	68.6	66.0	66.35	39.8906	.8917	.
	30	θ Capricorni	5	III-VII.	" " "	"	"	"	"	"	"	42.7106	.7003	30.
	31	Nadir 21h. 21m. . .	5	. .	179 59 61.8	68.0	65.8	67.2	65.0	63.0	65.13*d*	29.9170	.9162	.
	32	Lacaille 8937 . . .	5	III-VII.	67 29 62.2	69.5	66.8	70.1	68.1	66.7	67.23	39.2244	.2409	30.
	33	η Piscis Australis . .	5	III-VII.	67 49 61.0	68.1	65.1	67.9	67.0	65.2	65.72	15.6488	.6391	.
	34	O. S. 21904	5	III-VII.	54 9 61.6	69.2	65.0	68.5	68.9	63.7	66.15	46.6328	.6211	.
	35	Lacaille 9120 . . .	5	III-VII.	65 59 61.9	69.9	65.0	68.9	68.9	65.0	66.60	39.6242	.6145	.
	36	Lacaille 9135 . . .	5	III-VII.	" " "	"	"	"	"	"	"	33.7844	.7795	.
	37	Lacaille 9283 . . .	5	III-VII.	63 24 61.6	69.1	64.0	68.1	66.9	63.9	65.60	38.1216	.1359	.
	38	Lacaille 9336 . . .	5	III-VII.	62 24 61.0	69.3	64.0	68.1	67.5	64.5	65.73	34.0850	.0975	.
	39	B. A. C. 8064 . . .	5	III-VII.	67 44 60.7	68.8	65.7	68.5	67.0	65.0	65.95	38.1718	.1880	30.
2	40	Sun S. L.	4	I-IV.	31 14 60.8	69.2	62.5	67.1	67.9	63.9	65.23	34.4700	.4520	30.
	41	Sun N. L.	4	VI-IX.	30 44 62.0	70.3	63.3	68.1	69.0	65.2	66.32	37.9895	.0017	.
	42	Nadir 11h. 0m. . . .	5	. .	179 59 59.9	66.6	62.6	64.0	64.0	60.6	62.95*d*	29.8552	.8552	.
	43	Venus N. L. . . .	3	III-VII alt.	49 34 60.0	68.7	62.0	65.5	69.0	65.0	65.03	30.8320	.8283	30.
	44	Venus S. C. . . .	2	IV & VI.	" " "	"	"	"	"	"	"	29.5600	.5495	.
	45	δ Aquilæ	5	III-VII.	36 4 60.0	67.0	62.2	65.0	67.6	62.2	64.00	35.7114	.6982	30.
	46	γ Aquilæ	9	I-IX.	28 34 60.3	68.0	62.4	65.5	67.7	63.5	64.57	28.2566	.2650	30.
	47	O. S. 20096 . . .	5	III-VII.	55 49 60.4	68.0	63.1	67.0	68.0	64.1	65.10	28.9042	.9059	.
	48	An. AR. 20h. 3m. 49s.	5	III-VII.	48 4 59.9	65.3	61.0	63.9	67.0	62.2	63.22	26.1020	.1132	.
	49	An. AR. 20h. 14m. 55s.	3	IV-VI.	64 14 60.6	67.2	63.0	65.4	65.5	61.8	63.92	26.5223	.5152	.
	50	B. A. C. 7081 . . .	9	I-IX.	61 34 60.0	67.2	62.3	64.5	66.5	63.3	63.97	33.4645	.4705	.
	51	O. S. 20859 . . .	9	I-IX.	56 4 60.5	67.9	62.6	66.3	67.1	63.1	64.58	27.6843	.6776	30.
	52	Nadir 20h. 51m. . .	5	III-VII.	179 59 60.3	67.1	64.2	65.3	65.0	62.2	64.02*d*	29.8964	.8956	.
	53	29 Capricorni	5	III-VII.	54 34 62.1	69.8	64.4	67.9	69.0	63.8	66.18	27.6166	.6053	.
	54	O. S. 21443 . . .	5	III-VII.	61 29 59.9	67.2	62.8	65.0	66.3	63.1	64.05	33.3912	.3985	30.
3	55	Sun S. L.	4	I-IV.	31 34 62.0	71.7	65.4	70.9	69.4	66.0	67.57	30.8742	.8577	30.
	56	Sun N. L.	4	VI-IX.	31 4 63.5	72.1	66.1	71.9	70.9	67.0	68.58	34.2332	.2533	.
	57	Nadir 10h. 5m. . . .	5	. .	179 59 60.0	65.1	63.1	64.1	62.5	61.0	62.63*d*	29.7794	.7799	.
	58	Venus S. C. . . .	5	I-IX.	49 49 60.5	69.1	62.0	67.5	68.1	65.6	65.47	33.1860	.2032	29.
	59	Venus N. L. . . .	4	II-VIII.	" " "	"	"	"	"	"	"	34.4812	.4797	.
	60	O. S. 20194 . . .	5	III-VII.	66 59 61.9	67.4	65.1	65.9	68.0	66.2	65.75	32.0546	.0664	30.
	61	B. A. C. 6984 . . .	5	III-VII.	68 29 62.0	66.5	63.0	67.0	66.0	65.7	65.03	32.8338	.8327	.

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
17	64°.1	64°.0	63°.0	63°.5	66°.2	20	69°.9	68°.7	69°.8	69°.8	64°.2
31	65.8	65.1	65.5	. .	66.0	42	69.4	68.1	68.6	69.2	65.0
52	66.6	65.9	65.6	66.0	69.9	57	69.8	67.5	68.8	69.2	65.5

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
71.0	68.2	29.7780	+ 49.47	— 23 14.16	42 2 39.08	— 3 8 59.83		Ha.	
66.0	60.2	29.7538	— 1 14.13	+ 1 3.94	47 59 53.88	— 9 6 14.63	— 28.96		9th magnitude.
. .	. .	. . . .	3 9.41	42.00	36 2 38.36	+ 2 51 0.89	37.32		
65.0	59.0	. . . .	1 50.42	4 37.41	78 37 51.49	— 39 44 12.24	31.72		
. .	. .	. . . .	58.23	4 37.80	78 38 44.07	39 45 4.82	34.06		9th magnitude.
. .	. .	. . . .	1 39.15	4 37.70	78 38 3.05	39 44 23.80	37.65		9½ magnitude.
. .	. .	. . . .	2 19.80	4 26.23	78 7 10.68	39 13 31.43	40.11		
64.0	58.7	. . . .	2 11.29	1 53.71	63 9 46.97	24 16 7.72	45.36		8th magnitude.
. .	. .	. . . .	— 3 33.56	1 53.69	63 8 24.68	24 14 45.43	48.10		9th magnitude.
. .	. .	. . . .	+ 26.95	1 54.03	63 12 25.53	24 18 46.28	48.91		8th magnitude.
. .	. .	. . . .	2 28.71	3 31.03	74 56 5.11	36 2 25.86	49.26		
. .	. .	. . . .	+ 1 23.84	3 34.46	75 10 5.20	36 16 25.95	52.83		
. .	. .	. . . .	— 1 13.10	3 35.09	75 12 29.29	36 18 50.04	54.19		8th mag. [show it should have been 20.
. .	. .	. . . .	+ 4 40.10	1 27.93	56 41 16.75	17 47 37.50	59.81		9th mag. Mic. rec'd 21 rev., but 2 other ob'ns
. .	. .	. . . .	— 1 1.67	1 27.70	56 35 34.75	17 41 55.50	63.58		8th magnitude.
63.0	57.1	. . . .	+ 3 9.71	1 27.93	56 39 46.36	— 17 46 7.11	63.84		6th magnitude.
. .	. .	29.7637	— 1 8.20	28.53	30 19 26.30	+ 8 18 18.46		R.	
70.0	74.2	. . . .	+ 39.68	29.16	30 51 15.29				
71.5	73.8	. . . .	23.56	48.09	49 21 16.12	— 10 27 59.93			
. .	. .	. . . .	+ 1 6.70	51.07	49 22 2.24				
68.0	63.1	29.7526	— 3 3.50	41.58	36 2 42.01	+ 2 50 57.24	38.81		
. .	63.0	. . . .	1 48.54	4 34.66	78 37 51.65	— 39 44 12.40	30.88		
. .	62.5	. . . .	1 36.77	4 35.05	78 38 3.81	39 44 24.56	37.56		
. .	62.1	. . . .	2 11.48	1 52.60	63 9 46.70	24 16 7.45	45.35		
. .	. .	. . . .	— 3 33.57	1 52.54	63 8 24.55	24 14 45.30	48.07		
67.0	61.9	. . . .	+ 28.80	1 52.87	63 12 27.25	24 18 48.00	48.90		
. .	61.1	. . . .	— 5 17.88	1 27.08	56 41 15.55	17 47 36.30	59.76		
66.0	60.6	. . . .	6 45.95	1 27.08	56 39 47.48	17 46 8.23	63.84		
65.0	60.1	. . . .	4 57.49	2 17.39	67 27 27.13	28 33 47.88	73.08		
. .	59.5	. . . .	7 22.49	2 21.23	67 59 49.44	29 6 10.19	75.27		
. .	59.4	. . . .	8 58.88	1 19.17	54 2 26.44	15 8 47.19	71.13		
. .	. .	. . . .	5 9.20	2 8.13	65 57 5.53	27 3 26.28	75.30		
. .	59.3	. . . .	2 6.26	2 8.44	66 0 8.70	27 6 29.53	80.46		
. .	59.0	. . . .	4 22.84	1 54.30	63 22 37.06	24 28 57.81	84.22		
. .	59.0	. . . .	2 16.22	1 49.70	62 24 39.21	23 30 59.96	85.49		
63.5	59.0	. . . .	4 24.47	2 19.42	67 43 0.90	— 28 91 21.65	86.32		
68.5	72.0	29.7611	2 27.07	29.64	31 13 7.80	+ 7 56 26.87		Ha.	
. .	. .	. . . .	4 18.36	29.00	30 41 16.96				
71.5	75.3	. . . .	— 33.46	47.89	49 35 19.46				
. .	. .	. . . .	+ 6.63	51.06	49 36 2.72	— 10 42 1.84			
68.0	63.2	29.7674	— 3 5.96	41.42	36 2 39.46	+ 2 50 59.79	38.90		
67.5	62.5	. . . .	+ 47.10	31.09	28 36 22.76	+ 10 17 16.49	47.10		
. .	. .	. . . .	26.01	1 23.90	55 51 55.01	— 16 58 15.76	43.75		9th magnitude.
. .	. .	. . . .	1 54.57	1 3.61	48 8 1.40	9 14 22.15	50.14		7th magnitude.
. .	. .	. . . .	+ 1 41.97	1 58.06	64 18 43.95	25 25 4.70	49.90		9th magnitude. Double. Observed S. Foll.
. .	. .	. . . .	— 1 56.10	1 45.13	61 34 53.00	22 41 13.75	53.73		8th magnitude.
66.0	60.8	. . . .	+ 1 5.53	1 24.95	56 7 35.06	17 13 55.81	59.15		8th mag. 2 other stars in the field R. A. nearly the same, but about 15′ further north in δ.
. .	. .	. . . .	+ 1 7.78	1 20.45	54 37 34.41	15 43 55.16	66.65		7th mag. Another 8th mag. star preceding and about 5′ further N.
65.0	59.8	. . . .	— 1 53.84	1 45.03	61 29 55.24	— 22 36 15.99	69.42		
67.5	75.0	29.6960	36.41	29.69	31 35 0.85	+ 7 34 31.46		R.	
. .	. .	. . . .	2 22.89	29.05	31 3 14.74				
69.5	77.1	. . . .	1 49.97	50.30	49 49 5.80	— 10 55 4.90			Ill-defined.
. .	. .	. . . .	2 29.98	47.01	49 48 22.50				
69.0	65.6	29.7626	1 12.24	2 11.99	67 1 5.50	28 7 26.25	43.45		
. .	65.4	. . . .	— 1 36.25	+ 2 22.09	68 30 50.87	— 29 37 11.62	— 47.95		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
18–19	Sun	15′ 54″.49
40–41		15 55.42
55–56		15 53.05
21–22	Venus	23.06
43–44		21.63
58–59		21.65

Date.	Number.	Object.	No. of wire readings.	Wires.	Microscopes. A.	B.	C.	D.	E.	F.	Mean.	Micrometer. Observed.	Correc'd.	Barometer.
[illegible]					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Sept. 3	1	B. A. C. 7064	3	IV-VI.	64 34 67.0	67.0	64.0	66.0	67.5	64.9	65.40	30.4610	.4620	. .
	2	B. A. C. 7129	5	III-VII.	67 34 63.5	68.4	66.0	67.9	68.0	68.1	66.98	33.9694	.9768	. .
	3	Lacaille 8596	5	III-VII.	68 49 63.5	70.4	66.3	69.7	68.5	68.0	67.57	34.2472	.2639	29.996
	4	B. A. C. 7182	5	III-VII.	56 29 60.5	66.0	63.0	65.5	67.0	65.5	64.58	41.0924	.1044	. .
	5	29 Capricorni	5	III-VII.	74 44 60.5	67.9	62.8	64.5	66.1	62.5	63.88	46.6400	.6283	. .
	6	O. S. 21445	5	III-VII.	64 34 66.8	66.6	63.1	65.9	66.2	63.0	64.27	35.5256	.5206	. .
	7	Lacaille 8663	3	III-VII.	.. .. ..	..	..	..	..	..	..	30.2932	.3079	. .
	8	Lacaille 8718	5	III-VII.	67 14 61.8	67.7	64.3	65.6	66.6	65.0	65.00	31.9654	.9726	29.990
	9	α Aquarii	5	III-VII.	28 49 6[illegible]	68.	64.	67.0	65.8	67.0	65.97	27.1390	.1504	. .
	10	Nadir 22h. 16m.	5	. .	179 59 60.2	68.9	64.5	64.9	64.1	63.1	63.95d	29.8894	.8886	. .
4	11	Sun N. L.	4	I-IV.	31 24 67.	68.3	63.1	67.0	69.0	64.6	65.67	30.2140	.2090	30.112
	12	Sun S. L.	4	VI-IX.	31 34 67.5	70.1	63.0	65.2	69.0	64.5	65.72	26.7565	.7576	. .
	13	Nadir 11h. 45m.	5	. .	179 59 59.9	67.	61.5	62.2	64.0	60.6	62.20d	29.8364	.8357	. .
	14	Mercury	3	IV-VI	42 14 57.	67.9	59.0	61.9	66.0	61.1	61.82	31.8427	.8380	30.100
	15	Anon. 20h. 43m. 17s.	5	III-VII.	56 29 60.8	68.8	64.7	68.0	67.5	65.6	65.90	30.2598	.2745	30.114
	16	ψ Capricorni	5	III-VII.	.. .. ..	..	..	..	..	..	65.90	33.1392	.1529	. .
	17	Anon. 21h. 7m. 4s.	4	IV-VI.	54 24 66.	67.1	62.7	66.4	66.0	61.1	63.88	32.9593	.9629	. .
	18	29 Capricorni	3	V-VII.	.. .. ..	..	..	..	..	..	..	27.4897	.4848	. .
	19	ι Capricorni	5	III-VII.	58 14 58.6	67.	62.8	66.7	65.3	61.7	63.85	26.4720	.4707	. .
	20	O. S. 21443	9	I-IX.	61 29 6[illegible].3	68.3	65.0	67.4	67.5	64.1	65.70	33.4464	.4541	. .
	21	ε Pegasi	9	I-IX.	29 29 61.7	70.1	65.0	68.2	68.7	63.5	66.20	34.2702	.2787	. .
	22	Lacaille 8920	5	III-VII.	78 9 62.1	72.7	67.8	71.9	70.4	66.0	68.33	42.4178	.4256	30.114
	23	Nadir 21h. 55m.	5	. .	179 59 61.3	68.8	64.9	68.0	64.5	62.0	64.75d	29.9115	.9107	. .
5	24	Sun N. L.	3	I. III. & V.	31 49 61.3	69.2	63.6	67.3	67.8	63.4	65.43	35.5843	.5474	. .
	25	Sun S. L.	1	IX.	32 14 60.7	67.9	61.4	65.0	66.1	62.0	63.85	22.4000	.4423	30.175
	26	Nadir 12h. 10m.	3	. .	179 59 58.2	64.1	60.7	62.1	60.9	58.8	60.81d	29.8188	.8126	. .
	27	Mercury N. L.	4	II-VIII.	42 54 58.3	59.2	54.1	57.5	59.7	55.5	56.72	33.2025	.2156	30.161
	28	Venus N. L.	3	I. V. IX.	50 9 57.2	61.6	57.8	60.1	63.7	60.2	60.10	28.0213	.0340	. .
	29	Venus S. C.	2	III-VII.	.. .. ..	..	..	..	..	..	..	26.6455	.6339	30.158
	30	Polaris S. P.	7	0-6	307 29 58.2	60.7	57.8	55.7	62.2	58.5	58.85	30.1844	.2046	. .
	31	α Virginis	5	. .	49 19 61.1	67.0	61.4	64.1	67.9	65.2	64.47d	30.9328	.9384	30.137
	32	δ Ursæ Minoris	3	IV-VI	312 19 57.9	61.9	58.6	57.1	63.0	58.5	59.50	33.4313	.3838	30.116
	33	α Lyræ	3	II. V. & VIII.	0 14 59.0	64.2	60.2	61.5	63.5	61.0	61.57	32.1280	.1228	. .
	34	Nadir 19h. 39m	3	. .	179 59 60.0	65.8	63.4	63.9	64.8	62.0	63.33	29.8785	.8762	. .
	35	λ Sagittarii	3	III-VII.	65 24 61.0	68.0	62.1	64.0	65.6	63.4	63.85	29.6287	.6172	. .
	36	Lacaille 8394	2	IV & VI.	70 29 60.2	66.7	62.5	64.5	67.0	64.8	64.28	33.4390	.4398	30.105
	37	Lacaille 8459	3	III-VII.	71 39 60.9	66.2	61.7	64.5	66.0	64.3	63.93	35.8357	.8332	. .
	38	Lacaille 8476	1	V.	70 44 60.4	68.9	61.5	63.9	66.3	63.8	63.80	37.0810	.0900	. .
	39	B. A. C. 7135	3	III-VII.	63 54 59.2	64.3	62.0	64.0	65.2	63.0	62.95	29.4373	.4393	30.106
	40	B. A. C. 7233	3	III-VII.	68 44 58.5	63.6	60.2	61.9	64.1	62.0	61.72	32.8177	.8134	. .
	41	B. A. C. 7252	3	III-VII.	65 39 56.8	61.6	57.7	60.1	62.9	59.5	59.77	29.4190	.4227	. .
	42	B. A. C. 7300	2	VI & IX.	64 29 57.5	62.3	59.1	61.6	62.6	59.5	60.43	33.6225	.6186	30.114
	43	Nadir 21h. 1m.	3	. .	179 59 59.9	65.3	62.5	63.7	63.9	61.8	62.84d	29.9195	.9197	. .
7	44	α Lyræ	1	V.	0 14 57.8	62.9	58.5	58.3	63.4	61.3	60.37	32.0695	.0686	. .
	45	Nadir 18h. 47m.	2	. .	179 59 57.4	61.3	58.2	58.7	60.9	60.4	59.90d	29.6978	.6862	. .
	46	B. A. C. 6765	3	IV-VI.	65 59 58.3	61.4	59.1	58.9	64.1	63.3	60.85	34.6757	.6628	. .
	47	Anon. 19h. 9m. 40s.	1	V.	47 54 58.6	61.2	57.9	59.0	65.2	62.4	60.72	43.2255	.2379	30.186
	48	Lacaille 8111	1	V.	75 9 61.5	65.4	61.9	63.3	66.5	65.1	63.78	36.5580	.5469	. .
	49	ε Draconis	5	III-VII.	328 59 59.9	62.3	61.4	58.6	63.9	61.4	60.92	32.4494	.4293	30.197
	50	Lacaille, B. A. C. 6887	3	IV-VI.	68 19 60.9	65.2	61.5	63.0	65.9	65.5	63.83	32.4597	.4578	. .
	51	O. S. 20287	1	V.	63 34 62.	65.	61.6	62.9	66.8	65.6	63.82	40.9630	.9660	. .
	52	O. S. 20267	1	VII.	.. .. ..	..	..	..	..	..	..	34.8340	.8388	. .
	53	B. A. C. 7135	5	I-IX.	63 54 58.3	62.5	61.3	60.5	64.3	63.6	61.58	29.3164	.3396	30.196
	54	ν Capricorni	5	I-IX.	64 34 57.5	61.9	58.1	59.0	62.6	60.7	59.97	25.9396	.9544	. .
	55	B. A. C. 7227	3	IV-VI.	68 9 57.5	62.	57.3	58.5	62.5	61.1	59.82	31.5030	.4967	. .
	56	B. A. C. 7290	5	I-IX.	71 39 57.0	61.4	56.8	57.8	61.5	61.5	59.33	33.6246	.6274	. .
	57	Anon. 21h. 4m. 29s.	2	IV & VI.	74 29 57.5	61.8	59.1	59.1	63.2	61.6	60.55	36.7890	.7821	30.197
	58	B. A. C. 6563, S. P.	5	VI-IV.	301 49 58.8	61.5	59.2	58.2	63.6	60.9	60.37	28.9526	.9672	. .
	59	Nadir 21h. 9m.	3	. .	179 59 60.7	65.2	62.8	62.5	65.1	63.2	63.27d	29.8491	.8447	. .
8	60	Sun S. L.	2	II & IV.	33 24 58.9	66.4	61.1	63.6	66.6	64.5	63.52	27.7245	.6895	. .
	61	Sun N. L.	2	VII & IX.	32 54 59.9	64.9	61.4	63.8	67.0	64.4	63.90	31.1470	.1891	30.237

PIER THERMOMETERS.

Ref. N.	U.	L.	N.	S.	In.	Ref. N.	U.	L.	N.	S.	In.
10	67.3	66.7	67.6	67.0	66.3	23	66.2	65.1	65.5	64.8	65.0
13	71.5	69.6	70.5	71.4	66.6						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
- -	65.3	29.7626	— 21.92	+ 2 0.00	64 56 43.48	— 26 3 4.23	— 51.20	R.	
- -	65.0	. . .	2 12.12	2 18.07	67 55 12.93	29 1 33.68	54.39		
67.0	64.3	. . .	2 21.13	2 24.74	68 50 11.18	29 56 31.93	57.38		
- -	64.1	. . .	5 55.60	1 25.53	56 35 34.51	17 41 55.26	63.53		Brighter star following and above.
- -	64.0	. . .	8 48.79	1 19.51	54 37 34.60	15 43 55.35	66.63		
- -	63.8	. . .	3 0.54	2 0.10	64 54 3.83	26 0 24.58	69.13		
- -	63.6	. . .	17.10	2 0.40	64 56 47.57	26 3 8.32	70.39		
67.0	63.3	. . .	— 1 9.29	2 14.19	67 16 9.90	28 22 30.65	72.25		
- -	63.5	. . .	+ 1 21.90	47.28	39 52 15.15	— 0 58 35.90	78.66		
70.0	71.3	29.7655	— 13.91	29.81	31 25 21.57	+ 7 12 23.22		Ha.	
- -	- -	. . .	+ 1 34.31	30.46	31 57 10.49				
72.0	73.2	. . .	— 1 4.99	45.59	42 14 42.42	— 3 21 3.17			[Ha. read the circle. Tremulous and uncertain. N. observed and
66.0	60.0	29.7592	16.16	1 26.87	56 41 16.61	17 47 37.36	59.77		9th magnitude.
- -	- -	. . .	1 46.40	1 26.83	56 39 46.33	17 46 7.08	63.84		6th magnitude.
- -	- -	. . .	— 1 40.44	1 20.36	54 34 43.80	15 41 4.55	66.56		8½ magnitude.
- -	- -	. . .	+ 1 11.31	1 20.51	54 37 35.70	15 43 56.45	66.71		7th magnitude.
- -	- -	. . .	+ 1 43.12	1 25.70	56 18 12.66	17 24 33.41	68.01		6th magnitude.
- -	- -	. . .	— 1 55.85	1 45.08	61 29 54.93	— 22 36 15.68	69.37		9th magnitude.
- -	- -	. . .	2 21.71	32.62	29 38 17.11	+ 9 15 22.14	75.87		
64.5	59.5	. . .	6 37.13	4 24.42	78 7 55.62	— 39 14 16.37	— 71.06		
- -	- -	29.7878	— 3 0.58	30.05	31 47 34.90	+ 6 50 9.37		N.	
70.0	75.5:	. . .	+ 3 50.30	30.71	32 19 24.86				
72.0	76.9	29.7840	— 1 47.59	49.36	42 53 58.49	— 4 0 19.24			Image seen only at intervals.
- -	- -	29.7834	+ 54.85	1 12.05	50 12 7.00	11 18 27.75			Ill-defined.
73.0	77.0	29.7834	+ 1 38.74	+ 37.81	50 12 16.65				Unreliable, owing to the fineness of the cusp. Not used for declination of centre.
- -	- -	29.7820	— 13.22	— 1 12.18	307 28 33.45	88 34 54.20	— 64.14		
74.0	77.1	29.7818	36.27	+ 1 4.47	49 20 32.65	— 10 26 53.40	+ 68.60		30. First and last measurements outside the middle tally.
72.0	67.4	29.7700	1 53.31	— 1 1.98	312 17 4.21	+ 86 36 35.04	— 27.54		
- -	- -	. . .	— 1 13.99	+ 0.23	0 13 47.81	38 39 51.44	31.80		31. Over wires II, IV, V, VII, and IX.
- -	- -	29.7804	+ 5.12	2 3.01	65 27 11.98	— 26 33 32.73	41.80		
70.0	65.9	29.7909	— 1 54.40	2 38.13	70 30 48.01	31 37 8.76	46.30		
- -	- -	29.7978	3 9.23	2 48.61	71 39 43.31	32 46 4.06	49.06		
- -	- -	29.8013	— 3 48.52	2 40.14	70 43 55.42	31 50 16.17	51.43		
70.0	65.4	29.8060	+ 11.50	2 12.12	66 57 26.57	28 3 47.32	54.51		
- -	- -	29.8110	— 1 34.14	1 11.05	66 44 38.63	27 50 59.38	57.07		
- -	- -	29.8145	+ 12.28	2 4.87	65 42 19.92	26 48 37.67	59.48		
69.0	64.1	29.8180	— 1 59.16	1 58.38	64 29 59.65	— 25 36 20.40	61.56		
- -	- -	. . .							
- -	- -	29.7167	1 13.74	0.23	0 13 46.86	+ 38 39 52.39	32.03		
- -	- -	29.7214	2 34.93	2 4.66	65 59 30.58	— 27 5 51.33	26.16		
76.0	73.3	29.7223	7 3.76	1 1.63	47 48 58.59	8 51 19.34	33.00		R. A. half a minute uncertain; probably too great.
- -	- -	29.7266	3 33.84	+ 3 26.99	75 9 56.93	— 26 16 17.68	31.36		
75.0	72.2	29.7275	1 24.72	— 33.74	328 58 2.46	+ 69 55 36.79	55.69		
- -	- -	29.7288	1 25.57	+ 2 20.01	68 20 58.27	— 29 27 19.02	42.95		
- -	- -	29.7296	5 52.30	1 51.96	63 31 3.48	24 37 24.23	46.30		
- -	- -	. . .	— 2 40.19	1 52.22	63 34 15.85	24 40 36.60	46.47		
75.0	71.7	29.7335	+ 12.35	2 10.97	66 57 24.90	28 3 45.65	54.39		
- -	- -	29.7344	+ 1 58.52	1 57.77	64 38 56.26	25 45 17.01	56.13		
- -	- -	29.7361	— 55.20	1 50.47	63 10 55.09	24 17 15.84	58.89		
- -	- -	29.7370	— 2 1.97	2 47.43	71 40 44.79	32 47 5.54	59.29		
74.0	71.0	29.7379	+ 1 32.68	+ 3 19.97	74 34 53.20	— 35 41 13.95	— 61.90		Faint and uncertain. R. A. 20s. in doubt.
- -	- -	29.7396	24.22	— 1 33.95	300 48 50.64	+ 81 55 11.39	+ 70.03		Observed also at wires 1 and 5.
- -	- -	29.8187	+ 1 6.75	+ 31.78	33 26 42.06	+ 5 42 52.18			
76.2	81.0	. . .	— 42.95	+ 31.13	32 54 52.08				

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
11-12	Sun	15 54.46
24-25		15 54.98
59-60		15 54.99
28-29	Venus	23.02

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Sept. 8	1	Nadir 11h. 25m.	2	. .	179 59 59.1	62.9	62.4	60.3	62.1	61.9	61.45d	29.8630	.8595	. .
9	2	Venus N. L.	1	V.	50 44 60.2	65.3	60.8	63.0	65.1	66.0	63.40	29.8880	.8863	30.184
	3	σ Sagittarii	3	III–VII.	65 19 55.6	58.4	55.2	57.3	59.0	61.5	57.83	31.1557	.1695	30.240
	4	Nadir 19h. 5m.	2	. .	179 59 58.9	62.1	61.0	59.8	61.3	59.4	60.42	29.7732	.7644	
11	5	Nadir 19h. 5m.	3	. .	179 59 60.7	65.1	63.0	63.9	63.8	62.1	63.10d	29.9064	.9057	. .
	6	κ Cephei	4	. .	321 34 57.9	63.0	62.7	61.5	63.4	60.0	61.42	27.7537	.7385	30.203
12	7	Sun N. L.	1	IV.	34 24 58.7	65.3	60.8	64.4	64.1	61.9	62.53	29.1180	.1202	. .
	8	Sun S. L.	2	VII & IX.	34 54 59.3	66.6	60.8	64.6	65.3	61.9	63.08	25.6060	.6115	30.058
	9	Nadir 11h. 40m.	2	. .	179 59 58.7	62.1	60.5	61.0	60.8	59.4	60.42	29.8315	.8260	. .
	10	Venus N. L.	5	I–IX.	50 59 56.0	60.2	58.0	58.1	61.8	59.1	58.87	33.7054	.6979	30.042
	11	1 Aquilæ	5	I–IX.	47 14 58.8	61.0	58.1	59.5	63.5	60.9	60.30	34.3194	.3327	29.962
	12	α Lyræ	5	III–VIII.	0 14 59.5	63.3	61.0	61.5	64.0	61.7	61.83	32.2402	.2425	. .
	13	Nadir 18h. 45m.	3	. .	179 59 60.2	60.6	61.8	61.6	63.4	61.9	61.59d	29.8822	8799	. .
	14	ζ Aquilæ	5	I–IX.	25 14 58.4	63.5	58.6	60.6	61.8	59.4	60.38	33.4392	.4327	. .
	15	d Sagittarii	5	I–IX.	58 4 59.1	64.5	60.8	62.9	65.9	65.0	63.03	32.6770	.6722	29.963
	16	τ Draconis	5	III–VII.	325 49 58.4	61.1	59.2	57.3	64.0	59.5	59.92	33.9576	.9354	. .
15	17	Sun N. L.	1	IV.	35 34 58.6	64.2	59.3	62.9	64.9	62.4	62.05	30.8850	.8687	. .
	18	Sun S. L.	2	VII & IX.	36 4 60.8	65.1	60.8	64.0	66.4	63.4	63.42	27.2845	.3355	30.352
	19	Nadir 11h. 50m.	3	. .	179 59 58.8	62.6	60.2	59.9	62.2	61.7	60.90d	29.8545	.8505	. .
	20	Venus N. L.	4	I, III, VII, IX	50 59 57.7	63.2	58.4	60.3	64.1	64.0	61.28	31.7222	.7166	30.336
	21	Venus S. C.	1	V.	" " "	"	"	"	"	"	"	30.2110	.2235	. .
	22	Mercury N. L.	5	I–IX.	48 39 57.5	63.2	57.7	60.5	64.8	62.6	61.05	28.7728	.7678	30.326
	23	Polaris S. P.	3	. .	307 29 57.7	60.8	57.9	54.7	62.2	60.0	58.88	30.0460	.0045	. .
	24	δ Ursæ Minoris	5	1–5	312 19 60.4	63.0	61.8	58.5	65.7	62.3	61.95	33.4616	.4568	30.277
	25	1 Aquilæ	5	I–IX.	47 14 58.0	60.0	57.2	57.0	63.7	61.3	59.53	34.2470	.2630	. .
	26	α Lyræ	5	I–IX.	0 14 59.4	63.8	60.8	60.7	64.5	63.2	62.07	32.2232	.2155	. .
	27	Nadir 19h. 25m.	3	. .	179 59 58.1	62.8	60.5	60.1	63.0	61.3	60.97	29.7873	.7787	. .
	28	γ Aquilæ	3	III–VII.	28 34 57.8	62.5	59.7	60.7	65.4	62.3	61.40	28.2390	.2496	30.305
	29	Lacaille 8249	1	V.	71 9 60.2	64.8	61.3	62.3	66.9	65.8	63.55	29.6020	.5889	. .
	30	O. S. 20096	3	III–VII.	55 54 56.8	61.4	58.8	59.8	63.9	61.5	60.37	38.3013	.3149	. .
	31	An. AR. 19h. 58m. 20s.	1	V.	64 9 58.5	62.2	59.1	61.4	64.3	61.8	61.22	30.9090	.9087	. .
	32	O. S. 20287	5	I–IX.	63 34 59.2	62.5	58.4	60.2	64.0	62.3	61.10	40.8968	.9075	30.309
	33	O. S. 20297	1	IX.	" " "	"	"	"	"	"	"	34.7120	.7492	.
	34	π Capricorni	5	I–IX.	57 29 61.8	67.6	64.0	64.8	69.1	67.5	65.80	27.3906	.3933	. .
	35	Anon. 20h. 32m. 3s.	1	V.	55 34 58.5	63.2	60.0	61.6	64.5	61.8	61.60	29.2360	.2483	. .
	36	O. S. 20862–3	1	V.	61 24 59.0	63.6	60.7	60.5	65.4	63.6	62.13	27.4930	.4871	30.308
	37	Lacaille 8686	3	III–VII.	78 4 59.8	65.9	62.5	63.1	67.0	65.0	63.88	33.1320	.1508	. .
	38	Anon. 21h. 7m. 55s.	2	III & VII.	54 44 58.7	63.1	59.6	60.5	64.6	60.9	61;23	35.7760	.7709	. .
	39	O. S. 21443	5	I–IX.	61 29 59.0	64.4	60.8	60.8	65.3	63.6	62.32	33.3034	.3259	. .
	40	Lacaille 8968	5	I–IX.	65 59 57.6	61.5	59.6	59.6	63.5	61.5	60.55	32.2104	.2358	30.306
	41	Nadir 22h. 0m.	3	.	179 59 59.9	64.2	62.2	63.0	64.0	63.1	62.73	29.9030	.9021	
16	42	δ Ursæ Minoris	5	1–5	312 19 59.8	62.5	61.6	58.9	65.4	60.8	61.50	33.4696	.4640	30.181
	43	1 Aquilæ	5	I–IX.	47 14 59.3	62.0	59.0	59.8	65.0	62.4	61.25	34.2570	.2485	. .
	44	α Lyræ	5	I–IX.	0 14 59.3	64.3	61.2	61.6	65.2	62.5	62.35	32.2140	.2064	. .
	45	Nadir 18h. 45m.	2	. .	179 59 58.9	63.3	61.6	60.6	63.1	61.8	61.55d	29.7705	.7614	
	46	γ Aquilæ	5	I–IX.	28 39 59.3	64.0	61.4	62.8	66.8	62.6	62.82	37.8968	.8911	30.191
	47	ε Draconis	4	III–VII.	328 59 59.0	64.4	63.4	59.5	64.7	62.1	62.18	32.5638	.5297	. .
	48	λ Ursæ Minoris	6	1–5	309 59 57.8	61.8	58.7	56.6	63.1	59.8	59.63	29.0223	.0232	30.188
	49	α^2 Capricorni	3	V–IX.	51 49 57.9	63.4	58.3	61.5	64.9	63.0	61.50	29.5467	.5492	. .
	50	π Capricorni	3	III–VII.	57 29 56.5	63.0	59.3	60.6	63.5	62.3	60.87	27.1650	.1802	. .
	51	B. A. C. 7124	5	III–VII.	326 49 58.3	62.8	60.2	57.5	64.8	60.6	60.70	30.3058	.2929	. .
	52	B. A. C. 7216	5	I–IX.	64 19 56.7	61.2	58.3	60.0	62.1	60.0	59.72	28.7524	.7537	30.181
	53	B. A. C. 7252	1	VIII.	65 39 58.9	63.0	60.2	61.6	65.5	63.0	62.03	29.3010	.3379	. .
	54	B. A. C. 7300	5	I–IX.	64 29 56.4	61.2	58.3	60.2	62.0	60.5	59.77	33.3862	.4029	. .
	55	Lacaille 8719	2	III & VII.	78 49 56.5	63.2	60.2	60.4	63.4	61.1	60.80	34.3875	.4040	. .
	56	1 (Hev.) Draconis, S. P.	3	III, III½, IV.	300 49 57.1	61.4	59.0	58.0	62.8	59.7	59.67	28.9583	.0311	30.183
	57	Lacaille 8863	5	I–IX.	64 54 55.4	59.0	57.2	58.6	61.1	58.3	58.27	30.0216	.0401	. .
	58	79 Draconis	5	III–VII.	325 49 57.8	60.3	59.7	57.6	63.5	60.0	59.82	28.7594	.7245	30.180

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″	N.	
77.0	80.1	29.7962	— 2.82	+ 1 13.33	50 46 13.91	— 11 52 34.66			Faint, tremulous, and uncertain.
75.0	67.1	29.7509	— 44.54	+ 2 2.76	65 21 16.05	— 26 27 36.80	— 19.64		
70.0	67.3	29.8067	+ 1 4.99	— 44.86	321 35 21.55	+ 77 18 17.70	61.98		Observed over wires IV, 1, 5, and VI.
- -	- -	29.8126	0 21.71	+ 33.02	34 25 57.26	4 11 46.37			
72.0	78.4	- - -	+ 2 11.71	33.71	34 57 48.50				
74.0	80.8	- - -	— 2 1.82	1 13.95	50 59 11.00	+ 12 5 31.75			Faint and tremulous.
73.0	68.9	29.8292	2 21.20	1 0.40	47 13 39.51	— 8 20 0.26	18.79		
- -	- -	- - -	1 15.66	0.22	0 13 46.39	+ 38 39 52.86	32.39		Wire IV omitted.
- -	- -	- - -	1 52.98	26.39	25 13 33.71	+ 13 40 5.46	35.94		
72.0	68.5	- - -	1 29.14	+ 1 29.17	58 5 63.06	— 19 11 23.81	29.82		
- -	- -	- - -	2 8.74	— 38.09	325 47 13.09	+ 73 6 26.16	48.25		
- -	- -	29.8248	— 32.76	+ 34.75	35 35 4.04	3 2 38.00			
75.8	80.2	- - -	+ 1 18.05	36.98	36 6 58.45				
77.0	82.3	29.8148	— 59.63	1 14.32	51 0 15.95	12 6 36.70			Good observation.
77.0	82.3	29.8148	— 12.81	1 8.17					[served the centre.
77.8	82.0	29.8091	+ 32.64	+ 59.64	48 41 33.33	9 47 54.08			Position of limb uncertain; should have ob-
- -	82.6	29.8068	— 9.33	— 1 11.96	307 28 37.59	88 34 53.22	67.62		4m. 43s, 5m. 56s, and 6m. 56s. after transit.
76.4	74.9	29.7400	1 56.53	— 1 1.41	312 17 4.01	+ 86 36 35.24	28.35		
- -	- -	29.7414	2 21.76	+ 1 0.41	47 13 38.18	— 8 19 58.93	18.87		
- -	- -	29.7420	— 1 17.56	0.23	0 13 44.74	— 38 39 54.51	32.66		
75.9	72.7	29.7553	+ 47.21	30.65	28 36 19.26	+ 10 17 19.99	48.15		
- -	- -	29.7564	+ 5.25	2 43.21	71 12 52.01	— 32 19 12.76	37.21		
- -	- -	29.7589	— 4 28.25	1 22.63	55 51 54.75	16 58 15.50	43.53		
- -	- -	29.7628	35.92	1 55.56	64 11 20.86	25 17 41.61	44.08		R. A. 30s. in doubt; very faint and uncertain.
75.5	72.5	29.7646	5 49.36	1 52.25	63 31 3.99	24 37 24.74	45.74		8th magnitude.
- -	- -	29.7648	— 2 36.28	1 52.51	63 34 17.33	24 40 38.08	45.88		9th magnitude.
- -	- -	29.7718	+ 1 14.58	1 28.16	57 32 48.54	18 39 9.29	52.38		
- -	- -	29.7671	16.27	1 22.02	55 36 39.89	16 43 0.64	56.52		Excessively faint; very uncertain.
75.1	71.8	29.7800	+ 1 11.89	1 43.07	61 27 57.09	22 34 17.84	57.43		Recorded circle reading 61° 19′.
- -	- -	29.7885	— 1 45.42	4 19.44	78 7 37.90	39 13 58.65	58.36		
- -	- -	29.7923	3 7.44	1 19.41	54 43 13.20	15 49 33.95	66.25		
- -	- -	29.7994	1 50.56	1 43.28	61 29 55.04	22 36 15.79	68.59		Observed at wire IV instead of III.
74.5	71.3	29.8103	1 16.05	+ 2 5.77	66 0 50.27	— 27 7 11.02	73.35		
76.0	74.4	29.7050	1 57.85	— 1 1.28	312 17 2.37	+ 86 36 36.88	28.45		
- -	- -	29.7070	2 22.39	+ 1 0.26	47 13 39.12	— 8 19 59.87	18.91		
- -	- -	29.7085	1 18.32	0.24	0 13 44.27	+ 38 39 54.98	32.87		
75.5	73.2	29.7362	4 15.67	+ 30.52	28 36 17.67	10 17 21.58	48.26		Wire VI omitted.
- -	- -	29.7400	— 1 27.47	— 33.66	328 58 1.05	69 55 38.20	57.55		
75.0	73.3	29.7450	+ 22.63	— 1 06.58	309 59 15.68	+ 88 54 23.57	58.95		
- -	- -	29.7494	6.28	+ 1 11.09	51 51 18.87	— 12 57 39.62	51.26		
- -	73.2	29.7535	+ 1 20.68	+ 1 27.64	57 32 49.19	— 18 39 9.94	52.37		
- -	- -	29.7578	— 16.78	— 36.58	326 49 7.34	+ 72 4 31.91	67.42		
74.9	72.9	29.7628	+ 31.64	+ 1 55.95	64 22 27.31	— 25 28 48.06	57.16		
- -	- -	29.7653	+ 13.40	2 3.14	65 42 18.57	26 48 39.32	58.60		
- -	- -	29.7681	— 1 53.96	1 56.66	64 30 2.47	25 36 23.22	60.84		
- -	72.6	29.7715	— 2 25.24	+ 4 34.51	78 52 10.07	— 39 58 30.82	— 59.52		
74.6	72.5	29.7764	+ 23.37	— 1 33.55	300 48 49.49	+ 81 55 10.24	+ 72.75		
- -	- -	29.7827	— 8.07	+ 1 59.06	64 56 49.26	— 26 3 10.01	— 69.33		
74.5	72.3	29.7914	+ 33.45	— 38.02	325 49 55.25	+ 73 3 44.00	— 80.19		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
7–8 17–18	Sun	15′ 55.″62 15 57.20
20–21	Venus	26.54

DATE.	No.	OBJECT.	No. of wires.	Wires taken.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.
1863.												r.	r.
Sept. 16	1	α Aquarii	5	I-IX.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	64.	62.73	36.6412	.6279
	2	θ Aquarii	5	I-IX.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.58	29.7822	.7770
	3	π Aquarii	4	I-VII.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.70	36.6895	.6722
	4	Nadir 22h. [illegible]m.	3	. . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.1	61.[illegible]	29.[illegible]717	.8687
17	5	Sun S. L.	2	I & III.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.35	31.2945	.2720
	6	Sun N. L.	3	VI. VIII. IX.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.57	28.2553	.2757
	7	Nadir 11h. [illegible]m.	2	. . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.40	29.8922	.8906
	8	Venus S. L.	4	I. V. VII. IX.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	61.95	34.2924	.3120
	9	Venus S. C.	2	III & VI.	--	--	--	--	--	--	--	33.0180	.0248
	10	δ Ursæ Minoris	5	1-5.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34.4404	.4391
	11	Nadir [illegible]	3	. . .	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.1	61.15	29.7718	.7623
	12	α Lyræ	7	I-IX.	0 14 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	62.4	61.50	32.2541	.2513
	13	γ Aquilæ	5	I-IX.	[illegible]	62.4	[illegible]	[illegible]	[illegible]	62.1	[illegible]	28.1878	.1956
18	14	51 Cephei, S. P.	5	1-5.	[illegible]	[illegible]	[illegible]	[illegible]	61.4	58.3	58.77	31.0818	.0929
	15	50 Draconis	3	IV-VI.	[illegible]	62.7	[illegible]	[illegible]	[illegible]	[illegible]	61.27	34.2887	.2888
	16	ζ Aquilæ	5	I-IX.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33.3800	.3790
	17	Nadir 19h. [illegible]m.	2	. . .	179 59 58.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.8462	.8416
21	18	Sun N. L.	2	III & IV.	[illegible]	[illegible]	[illegible]	64.8	64.0	[illegible]	62.48	31.8900	.8688
	19	Sun S. L.	2	VII & IX.	38 21 [illegible]	59.4	[illegible]	59.1	59.5	55.4	57.25	28.0140	.0538
	20	Venus N. L.	3	III-VII.	5 1[illegible] 57.3	[illegible]	[illegible]	62.4	62.7	59.7	60.78	24.9137	.9157
	21	Venus L. C.	1	IX.	--	--	--	--	--	--	--	22.6250	.6187
	22	Nadir 12h. 35m.	2	. . .	[illegible]	61.1	[illegible]	[illegible]	59.7	55.9	58.57	29.6412	.6290
	23	Polaris, S. P.	3	2-4.	[illegible]	61.7	[illegible]	[illegible]	61.4	58.8	59.77	29.9717	.9763
	24	Mercury, centre	5	I-IX.	71 9 [illegible]	64.4	61.1	64.1	64.1	62.0	62.53	26.9034	.9082
	25	Nadir 14h. 10m.	2	. . .	179 59 57.8	61.4	[illegible]	[illegible]	59.9	59.0	59.72	29.7382	.7278
	26	ε Boötis	5	I-IX.	11 34 57.7	[illegible]	[illegible]	62.6	61.7	59.1	60.57	31.2006	.2000
	27	β Ursæ Minoris	3	IV-VI.	324 9 56.9	[illegible]	[illegible]	57.9	60.2	57.8	58.57	27.0653	.0629
	28	μ Herculis	5	III-VII.	11 4 56.9	62.3	58.9	62.0	61.7	59.0	60.13	29.7618	.7477
	29	λ Aquilæ	5	I-IX.	47 9 55.5	58.3	56.5	58.6	59.2	57.8	57.65	24.6268	.6169
	30	α Lyræ	1	V.	0 14 58.3	62.1	59.6	63.0	61.1	59.1	60.53	32.1120	.1223
	31	Nadir 18h. 40m.	2	. . .	179 59 56.9	61.6	[illegible]	61.6	59.8	58.4	59.72	29.7002	.6885
	32	Moon S. L.	5	. . .	58 29 59.7	65.5	61.7	63.7	65.8	65.2	64.10	24.8012	.8031
	33	Lacaille 8219	5	I-IX.	71 9 59.0	64.5	59.8	65.6	63.0	61.1	62.50	29.5724	.5764
	34	O. S. 20096	3	II. V. VIII.	55 54 60.2	64.9	61.3	65.0	65.0	64.0	63.40	38.4787	.4819
	35	Anon. 20h. 0m. 7s.	1	V.	77 59 56.8	62.9	59.0	63.6	61.7	60.4	60.73	37.2520	.2643
	36	Anon. 20h. 8m. 5s.	1	IX.	78 14 57.8	63.5	60.2	64.4	63.0	61.2	61.68	31.5750	.6187
	37	Lacaille 8476	1	V.	70 39 56.0	62.0	57.9	62.0	61.1	59.6	59.77	27.2960	.3069
	38	Lacaille 8590	5	I-IX.	64 19 55.5	59.9	57.8	60.9	59.1	56.9	58.35	28.7738	.7764
	39	B. A. C. 7229	3	IV-VI.	318 54 59.7	63.0	62.7	61.5	61.9	60.4	61.53	35.9663	.9525
	40	Lacaille 8719	5	I-IX.	78 49 56.9	63.1	60.3	63.5	61.9	60.2	60.98	34.5670	.5764
	41	ι Capricorni	5	I-IX.	56 19 56.8	62.3	59.1	64.0	62.5	61.0	60.95	35.9312	.9403
	42	O. S. 21443	1	V.	61 24 56.7	62.6	58.2	62.1	61.0	59.9	60.07	23.6750	.6718
	43	Nadir 21h. 45m.	3	. . .	179 59 57.6	62.4	61.1	63.6	59.4	58.7	60.47	29.7528	.7430
	44	α Leonis	5	I-IX.	26 14 57.2	65.8	61.2	66.1	61.2	56.5	61.33	29.2392	.2459
	45	α Ursæ Majoris	5	III-VII.	336 24 59.2	64.7	64.5	63.9	62.6	59.0	62.32	29.7946	.7720
22	46	Sun S. L.	2	I & III.	38 49 58.0	64.8	61.6	66.1	62.9	59.5	62.15	31.2995	.2756
	47	Sun N. L.	2	VI & VIII.	38 19 55.1	61.4	58.5	63.5	60.6	57.0	59.35	34.9145	.9385
	48	Nadir 12h. 10m.	3	. . .	179 59 58.7	64.5	62.2	66.0	61.1	58.9	61.90	29.8032	.7990
	49	Venus N. L.	5	I-IX.	50 9 60.2	66.4	63.9	68.0	66.1	62.9	64.58	27.2464	.2635
	50	Mercury, Centre	1	V.	51 29 58.2	64.3	60.7	65.9	63.5	60.7	62.38	28.8810	.8789
	51	δ Ursæ Minoris	4	2-5.	312 19 58.2	62.3	60.1	61.1	61.0	57.0	59.95	33.3150	.3238
	52	λ Aquilæ	5	I-IX.	47 9 58.5	60.9	58.4	62.0	60.9	59.1	59.97	24.7634	.7571
	53	α Lyræ	5	I-IX.	0 14 59.2	64.9	62.0	66.0	62.4	60.0	62.42	32.2370	.2292
	54	Nadir 18h. 40m.	2	. . .	179 59 58.3	63.3	61.6	64.8	61.2	57.6	61.13	29.7500	.7489
	55	B. A. C. 6672	5	I-IX.	64 54 57.9	61.9	60.1	64.3	61.7	58.3	60.70	34.6742	.6729
	56	Lacaille 8171	3	III-VII.	78 34 57.6	64.9	61.6	64.6	62.5	60.3	61.92	33.3530	.3811
	57	B. A. C. 6768	3	III-VII.	68 19 57.5	64.1	60.8	65.9	62.0	61.2	61.92	28.6813	.6821
	58	ι Draconis	5	III-VII.	328 59 59.1	65.1	64.0	64.3	62.0	58.7	62.20	32.5198	.4907
	59	τ Aquilæ	5	I-IX.	31 59 58.3	64.5	60.2	64.3	62.1	59.3	61.45	31.7272	.7120
	60	λ Ursæ Minoris	5	2-4.	309 59 58.2	63.2	61.0	61.6	59.8	58.3	60.35	28.9854	.9885

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	29.7947	— 3 34.24	+ 46.77	39 52 15.26	— 0 58 36.01	— 79.36	N.	
74.4	72.1	29.7990	+ 0.69	1 0.74	47 21 4.01	— 8 27 24.76	80.12		
. .	. .	29.8037	— 3 35.35	44.09	38 12 11.44	+ 0 41 27.81	82.48		
. .	. .	. . .	— 2 19.69	36.17	36 53 15.83	2 16 19.68			
75.3	80.2	29.8165	+ 48.31	35.44	36 21 23.32				
. .	. .	29.8057	— 2 21.29	1 13.06	50 53 54.32	12 0 15.07			Limb good.
76.4	82.0	29.8057	1 40.93	+ 45.12					Cusp too pointed. Cloudy and faint.
. .	. .	29.7256	1 56.39	— 1 0.69	312 17 3.44	86 36 35.81	28.52		
76.6	75.3	. . .	— 1 19.19	+ 0.23	0 13 42.54	38 39 56.71	32.87		Wires II and III omitted.
. .	74.6	29.7270	+ 0 48.01	+ 30.13	28 36 19.12	10 17 20.13	— 48.35		
73.5	66.8	29.8138	— 40.11	— 1 16.21	306 8 2.45	87 14 23.20	+ 35.15		
. .	. .	. . .	2 20.31	— 41.10	323 36 59.83	75 16 39.39	— 40.89		
. .	. .	. . .	1 51.78	+ 26.53	25 13 35.33	13 40 3.92	36.42		
. .	65.4								Barometer and thermometer read at 19h. 20m.
. .	. .	29.6746	— 1 8.80	39.00	37 54 32.68	+ 0 43 8.97			
. .	65.4	. . .	+ 50.84	39.80	38 26 27.89				
. .	. .	. . .	2 29.20	1 15.25	50 23 45.23	— 11 30 5.98			
65.0	66.2	. . .	3 9.87	+ 45.61					
. .	67.2	29.7454	— 7.24	— 1 13.67	307 28 38.86	88 34 59.61	— 69.72		Adjusted level, collimation, and azimuth.
. .	. .	29.7297	+ 1 28.47	+ 1 2.74	51 12 33.74	12 18 54.49			
67.0	68.4	29.7207	— 1 46.38	+ 11.22	11 14 25.41	+ 27 39 13.84	+ 46.55		
. .	. .	. . .	+ 1 23.33	— 40.71	324 10 41.19	+ 74 42 58.06	+ 41.72		
67.0	63.2	. . .	— 0.85	+ 11.20	11 5 10.48	+ 27 48 28.77	— 13.27		
. .	59.7	. . .	+ 2 40.02	1 2.05	47 13 39.72	— 8 20 0.47	19.05		
. .	. .	. . .	— 1 15.30	+ 0.23	0 13 45.46	38 39 53.79	33.16		
. .	58.2	. . .	+ 2 34.18	— 65 20.69	57 27 17.59	18 33 38.34			Wires I, IV, V, VI, and IX.
. .	57.5	. . .	+ 4.21	+ 2 47.44	71 12 54.15	32 19 14.90	36.98		
63.5	. .	. . .	— 4 34.69	1 24.82	55 51 53.53	16 58 14.28	43.48		
. .	. .	. . .	3 56.51	4 23.38	78 0 27.60	39 6 48.35	40.08		
. .	57.0	. . .	— 59.50	4 29.92	78 18 32.10	39 24 52.35	42.54		
63.2	67.4	. . .	+ 1 15.68	2 43.01	70 43 58.46	31 50 19.21	49.81		
. .	67.1	. . .	+ 29.60	+ 1 59.56	64 22 27.51	— 25 28 48.26	56.96		
. .	. .	. . .	— 3 15.39	— 50.43	318 50 55.71	+ 80 2 43.54	72.89		
. .	66.5	. . .	2 32.24	+ 4 43.43	78 52 12.17	— 39 58 32.92	59.04		
. .	. .	. . .	— 3 15.00	1 26.45	56 18 12.40	17 24 33.15	67.45		
. .	. .	. . .	+ 3 9.65	1 46.07	61 29 55.79	— 22 36 16.54	— 68.36		Image very unsteady. Very bad night. Bar.
62.0	65.5								[and ther. at 21h. 51m.
57.2	57.1	. . .	+ 15.03	+ 28.75	26 15 45.11	+ 12 37 54.14	+ 66.14		Tremulous.
58.8	58.8	. . .	— 1.47	— 25.38	336 24 35.47	62 29 3.78	+ 79.29		
60.2	59.0	. . .	48.61	+ 41.42	38 49 54.96	+ 0 19 43.57			
. .	. .	. . .	— 2 43.45	40.49	38 17 56.39				Very tremulous.
. .	. .	. . .	+ 1 17.18	1 16.52	50 12 38.27	— 11 18 59.02			Very tremulous. Sun shone down telescope during observation.
61.3	60.1	. . .	+ 26.53	+ 1 4.96	51 31 33.87	12 37 54.62			
61.0	55.0	. . .	— 1 52.83	— 1 4.27	312 17 2.85	86 36 36.40	28.20		
. .	. .	. . .	+ 2 35.76	+ 1 3.29	47 13 39.02	8 19 59.75	19.03		
. .	. .	. . .	— 1 18.52	0.23	0 13 44.13	38 39 55.12	33.18		
60.2	51.5	. . .	2 35.12	2 5.19	64 54 30.77	26 0 51.52	31.95		
. .	. .	. . .	— 1 54.63	4 43.63	78 37 50.92	39 44 11.67	30.02		
. .	51.5	. . .	+ 32.70	+ 2 27.56	68 23 2.18	— 29 29 22.93	36.28		
. .	. .	. . .	— 1 26.72	— 35.53	328 57 59.95	+ 69 55 39.30	58.79		
. .	. .	. . .	— 1 2.30	+ 36.92	31 59 36.07	6 54 3.18	53.11		
. .	. .	. . .	+ 23.10	— 1 10.36	309 59 13.09	+ 88 54 26.16	60.31		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
5-6	Sun	15 56.26
18-19		15 57.60
46-47		15 59.28
8-9	Venus	25.29
20-21		27.32

OBSERVATIONS WITH THE MURAL CIRCLE.

	Number.		OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
						° ′ ″	″	″	″	″	″	″	r.	r.	in.
22	1		Moon S. L.	5	I-IX.	55 9 58.6	64.3	61.9	66.6	63.7	60.4	62.58	31.6916	.6961	30.490
	2	α	Cygni	5	III-VII.	354 4 60.0	61.5	65.3	66.9	64.1	61.4	63.20	28.5788	.5589	. .
	3		O. S. 20884	5	I-IX.	61 19 59.5	65.4	62.5	68.1	63.5	62.1	63.52	38.4830	.4894	. .
	4		Lacaille 8686	3	III-VII.	77 59 58.0	64.5	62.2	66.4	62.8	60.2	62.35	23.8660	.8825	30.490
	5		Nadir 21h. 5m.	3	. .	179 59 57.5	63.8	62.5	65.9	60.6	57.0	61.22	29.7597	.7607	
	6	α	Leonis	5	II-VIII.	26 14 56.4	65.2	60.0	65.2	61.4	57.9	61.02	29.2300	.2368	30.580
	7	γ	Leonis	3	III-VII.	18 19 59.5	65.7	62.5	67.7	64.1	59.8	63.38	26.8373	.8226	. .
	8	α	Leonis	5	II-VIII.	26 14 57.8	67.1	62.0	66.4	63.2	58.6	62.52	29.2696	.2759	30.300
	9	α	Ursæ Majoris	3	IV-VI.	336 24 61.7	67.7	66.3	65.5	65.9	62.4	64.92	29.8123	.7996	30.288
23	10		Sun S. L.	4	I-IV.	39 14 58.9	67.7	61.3	66.5	66.0	62.0	63.73	34.5800	.5398	30.554
	11		Sun N. L.	4	VI-IX.	38 39 56.0	61.4	59.0	64.0	62.7	59.0	60.85	28.5632	.5829	. .
	12		Venus S. C.	4	I.III V VIII.	49 59 61.0	68.5	63.1	68.3	67.5	64.0	65.40	30.8630	.8636	30.546
	13		Venus N. L.	4	II,IV,VI,IX.	" " "	"	"	"	"	"	"	31.9907	.9996	. .
	14		Nadir 12h. 36m.	5	. .	179 59 60.4	66.0	62.9	65.9	63.1	61.1	63.23*d*	29.8340	.8337	
	15		Polaris S. P.	1	V.	307 29 60.5	65.3	60.8	62.2	65.0	61.0	62.47	30.0400	.0471	30.524
	16	π	Sagittarii	5	III-VII.	60 9 60.3	67.0	62.8	66.8	66.1	64.7	64.62	37.4028	.4087	30.430
	17	ρ¹	Sagittarii	3	IV-VI.	56 59 59.5	68.3	64.0	68.9	67.9	66.1	65.78	33.6737	.6611	30.430
	18		Nadir 19h. 27m.	3	. .	179 59 59.3	65.0	62.1	64.5	62.5	60.5	62.32*d*	29.8068	.7998	
	19	γ	Aquilæ	3	IV-VI.	28 34 60.0	66.0	63.0	67.1	65.9	62.2	64.20	28.2817	.2928	30.438
	20	α	Aquilæ	5	III-VII.	30 24 59.9	65.3	61.5	66.0	66.0	62.5	63.53	35.3260	.3341	. .
	21	c	Sagittarii	3	IV-VI.	66 59 59.8	65.1	62.0	65.0	64.5	62.8	63.38	36.7767	.7691	. .
	22		O. Arg. S. 20194	3	IV-VI.	" " "	"	"	"	"	"	"	32.1160	.1280	. .
	23		Lacaille 8373	5	III-VII.	73 24 60.8	66.7	61.9	68.0	66.0	63.0	64.40	36.0152	.0262	. .
	24		Lacaille 8414	3	IV-VI.	71 59 61.8	68.2	62.2	67.1	66.5	64.5	65.05	29.0147	.0224	30.426
	25	ρ	Capricorni	1	V.	57 9 60.0	71.0	65.6	69.9	69.8	67.8	67.35	34.4820	.4772	. .
	26		B. A. C. 7111	5	III-VII.	61 49 60.2	66.5	61.3	65.5	64.0	62.8	63.38	36.3664	.3758	. .
	27	ψ	Capricorni	5	III-VII.	64 39 60.0	67.0	62.8	67.2	65.0	62.7	64.12	35.7270	.7186	. .
	28		Lacaille 8619	3	IV-VI.	70 54 61.0	67.2	62.6	68.3	66.5	65.0	65.10	30.1090	.1210	. .
	29		B. A. C. 7300	5	III-VII.	64 29 61.3	67.2	63.0	68.0	65.2	62.5	64.53	33.7240	.7154	. .
	30		B. A. C. 7340	5	III-VII.	63 4 62.2	68.5	63.7	68.5	67.0	64.8	65.78	35.4012	.4078	. .
	31		Moon S. L.	5	III-VII.	50 44 63.0	69.0	64.4	69.1	67.1	66.4	66.50	33.8642	.8628	30.424
	32		Nadir 21h. 26m.	3	. .	179 59 58.1	65.3	62.8	65.6	62.0	59.2	62.17*d*	29.8290	.8234	
24	33		Sun N. L.	4	I-IV.	39 4 57.3	64.0	59.8	64.5	64.1	61.0	61.78	31.7658	.7262	30.269
	34		Sun S. L.	2	VIII-IX.	39 34 60.1	67.5	62.0	68.0	66.5	64.6	64.78	28.0115	.0587	. .
	35		Venus N. L.	7	II-VIII.	49 44 58.5	64.2	60.5	64.0	64.3	62.1	62.27	29.5603	.5516	. .
	36		Polaris, S. P.	9	I-V.	307 29 58.3	62.1	59.8	59.0	63.1	59.9	60.37	29.9934	.0068	30.223
	37		Nadir 13h. 48m.	2	. .	179 59 56.7	60.6	58.5	59.3	59.8	58.3	58.87*d*	29.6598	.6648	
	38		Nadir 18h. 12m.	3	. .	179 59 56.3	60.7	58.1	58.6	60.2	59.3	58.87	29.6685	.6730	
	39	η	Serpentis	5	I-IX.	41 49 56.3	. .	57.6	58.5	63.4	60.6	59.75	32.6752	.6630	. .
	40	λ	Sagittarii	3	III-VII.	64 19 58.0	61.6	59.4	60.5	63.0	60.7	60.53	27.4450	.4559	30.128
	41	51	Cephei S. P.	5	5–1	306 9 57.5	59.5	56.5	56.6	60.5	59.0	58.27	31.0516	.0613	. .
	42	50	Draconis Ref.	2	VIII-IX.	216 19 59.3	61.6	58.9	60.2	60.2	63.4	60.60	24.9960	.1386	. .
	43	π	Sagittarii	5	I-IX.	60 4 59.0	61.8	60.8	61.5	64.5	63.2	61.80	27.7054	.7023	30.123
	44	ψ	Sagittarii	3	III-VII.	64 19 59.8	63.8	61.2	62.4	64.9	62.1	62.37	28.1463	.1697	
	45	ρ¹	Sagittarii	5	I-IX.	56 59 59.7	63.0	60.0	61.9	64.7	63.9	62.20	33.4764	.4804	. .
	46		Lacaille 8111	3	III-VII.	75 4 59.2	63.6	62.5	63.3	65.9	63.1	62.93	26.9813	.0039	30.123
	47	53	Sagittarii	4	I, IV, VI, IX.	62 34 59.1	63.1	58.9	61.8	64.9	62.4	61.70	28.3122	.3341	. .
	48		B. A. C. 6727	4	I,IV.VII,IX.	" " "	"	"	"	"	"	"	27.9700	.9862	. .
	49		Lacaille 8209	5	III-VII.	82 24 58.1	63.0	59.0	60.9	63.0	60.9	60.82	25.6508	.6442	. .
	50	ε	Draconis	1	V.	328 59 60.3	63.8	62.2	60.4	63.7	61.5	61.98	32.5910	.5782	. .
	51	c	Sagittarii	3	III-VII.	65 54 58.9	62.6	60.9	62.7	64.5	63.4	62.17	27.0487	.0577	30.116
	52	λ	Ursæ Minoris	3	4–5	309 59 59.2	62.0	59.6	58.2	63.8	60.7	60.58	29.0660	.0733	. .
	53	κ	Cephei	3	IV-VI.	321 34 57.0	59.9	59.2	58.6	61.9	59.1	59.28	27.7470	.7228	. .
	54	κ	Cephei (comp.)	2	IV½-V½.	" " "	"	"	"	"	"	"	27.5995	.5814	. .
	55		B. A. C. 7069 (1st *)	4	I,III,V,VIII	61 29 57.1	61.8	57.5	60.4	62.4	61.3	60.08	32.6645	.6569	. .
	56		B. A. C. 7069 (2d *)	4	II,IV,VI,IX.	" " "	"	"	"	"	"	"	31.8455	.8511	. .
	57		B. A. C. 7081	2	VI-VIII.	" " "	"	"	"	"	"	"	23.6810	.6857	. .
	58		O. S. 20859	3	III, VII.	56 4 57.7	62.1	59.0	62.2	63.9	62.1	61.17	27.5213	.5138	. .
	59		O. S. 20951	1	V.	54 39 58.4	62.2	58.9	61.9	63.4	60.5	60.88	29.8020	.7944	. .
	60	α	Cephei	5	III-VII.	336 54 57.7	61.7	61.0	58.5	62.5	60.5	60.32	33.3240	.3194	30.097
	61		B. A. C. 7630	3	III-VII.	54 44 56.5	61.2	58.1	60.9	62.4	58.9	59.67	27.7463	.7361	. .
	62		O. S. 21821	3	III-VII.	57 24 59.8	65.1	61.8	61.5	66.6	65.2	63.83	29.2710	.2841	. .

PIER THERMOMETERS.

Ref. No.	U.	L.	N.	S.	In.	Ref. No.	U.	L.	N.	S.	In.
	°	°	°	°	°		°	°	°	°	°
14	63.0	61.7	. .	. .	. .						

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
58.0	49.6	. . . .	— 1 1.79	— 63 53.25	54 5 7.54	— 15 11 28.29		N.	
. .	. .	. . . .	+ 36.56	— 6.13	354 5 33.63	+ 44 48 5.62	— 70.08		
. .	49.3	. . . .	— 4 34.78	+ 1 47.70	61 17 16.44	— 22 23 37.19	57.56		9th magnitude. Wire IV instead of III.
. .	48.8	. . . .	+ 3 3.18	4 33.60	78 7 39.13	— 39 13 59.88	— 57.59		
57.5	57.8	. . . .	15.31	28.85	26 15 45.18	+ 12 37 54.07	+ 66.24		Image extremely unsteady. Wires III and VII omitted.
. .	. .	. . . .	1 31.01	19.41	18 21 53.80	20 31 45.45	69.21		
56.0	60.9	. . . .	+ 13.80	+ 28.41	26 15 44.73	12 37 54.52	66.19		Wires III and VII omitted.
59.0	63.4	. . . .	— 2.62	— 25.02	336 24 37.18	+ 62 29 2.07	+ 79.90		
61.0	61.4	29.7307	— 2 30.77	+ 41.92	39 13 14.88	— 0 3 37.15			
. .	. .	. . . .	+ 35.99	41.09	38 41 17.93			Ha.	
61.5	62.3	. . . .	— 35.52	36.64					
. .	. .	. . . .	1 11.14	+ 1 15.84	50 0 10.10	— 11 6 30.85			Exceedingly tremulous.
62.5	63.8	. . . .	9.92	— 1 15.03	307 28 37.52	+ 88 34 58.27	— 70.53		
62.0	56.3	29.7400	4 0.43	+ 1 41.12	60 7 45.31	— 21 14 6.06	26.29		
61.5	55.9	. . . .	— 2 2.94	1 29.57	56 59 32.41	— 18 5 53.16	31.49		
61.0	54.7	. . . .	+ 45.37	31.91	28 36 21.48	+ 10 17 17.77	48.72		
. .	. .	. . . .	— 2 55.40	34.31	30 22 42.44	+ 8 30 56.80	49.57		
. .	. .	. . . .	3 40.38	2 16.80	66 58 39.80	— 28 5 0.55	41.50		
. .	. .	. . . .	1 14.87	2 17.06	67 1 5.57	28 7 26.32	42.06		8th magnitude.
. .	. .	. . . .	— 3 17.10	3 13.79	73 25 1.09	34 31 21.84	42.83		
60.0	53.4	. . . .	+ 22.50	2 58.70	72 3 26.25	33 9 47.00	45.66		
. .	. .	. . . .	— 2 28.53	1 30.61	57 9 9.43	18 15 30.18	52.85		
. .	. .	. . . .	3 28.06	1 49.01	61 48 24.33	22 54 45.08	53.91		
. .	. .	. . . .	3 7.45	2 3.24	64 38 59.91	25 45 20.66	55.45		
. .	. .	. . . .	11.95	2 48.34	70 57 41.49	32 4 2.24	56.32		
. .	. .	. . . .	2 4.64	2 2.54	64 30 2.43	25 36 23.18	60.26		
. .	. .	. . . .	2 57.71	+ 1 55.17	63 4 3.24	24 10 23.99	62.22		
58.5	51.4	. . . .	2 9.26	— 61 26.41	49 41 30.83	10 47 51.58			
61.4	65.3	29.7160	— 1 3.03	+ 40.91	39 4 39.66				
. .	. .	. . . .	+ 51.95	41.74	39 36 38.47	0 26 59.82		N.	
. .	65.6	. . . .	+ 5.16	+ 1 14.38	49 46 21.81	— 10 52 42.56			
63.5	67.1	. . . .	— 9.12	— 1 13.77	307 28 37.48	+ 88 34 58.23	70.84		
. .	. .	. . . .	— 1 32.40	+ 50.95	41 49 18.30	— 2 55 39.05	16.06		The reading of microscope B was overlooked. The mean given is that obtained by applying the correction — 0″.27 to the mean of C, D, E, F.
64.7	62.5	. . . .	+ 1 10.86	+ 1 58.24	64 23 9.63	— 25 29 30.38	— 10.03		
. .	. .	. . . .	— 0 42.18	— 1 18.05	306 7 58.04	+ 87 14 18.79	+ 34.51		
. .	. .	. . . .	+ 2 23.51	+ 42.04	216 23 6.15	+ 75 16 45.40	— 41.40		
. .	60.3	. . . .	1 3.14	1 39.30	60 7 44.24	— 21 14 4.99	26.19		
. .	. .	. . . .	+ 48.48	1 58.76	64 22 49.61	25 29 10.36	26.62		
. .	. .	. . . .	— 1 58.03	1 27.97	56 59 32.14	18 5 52.89	31.40		
64.0	59.6	. . . .	+ 1 25.04	3 32.24	75 10 0.21	36 16 20.96	27.26		
. .	. .	. . . .	43.32	1 50.27	62 37 35.29	23 43 56.04	35.49		
. .	. .	. . . .	54.23	1 50.27	62 37 46.20	23 44 6.95	35.49		
. .	. .	. . . .	+ 2 7.66	+ 6 48.19	82 33 56.67	— 43 40 17.42	31.00		
. .	. .	. . . .	— 1 29.74	— 34.55	328 57 57.69	+ 69 55 41.56	59.04		
63.5	58.5	. . . .	+ 1 23.35	+ 2 14.14	66 58 39.66	— 28 5 0.41	41.40		
. .	. .	. . . .	20.15	— 1 8.39	309 59 12.34	+ 88 54 26.91	60.55		
. .	58.0	. . . .	1 2.49	45.59	321 35 16.18	77 18 23.07	65.06		
. .	. .	. . . .	+ 1 6.93	— 45.59	321 35 20.62	+ 77 18 18.63	65.06		
. .	. .	. . . .	— 1 32.21	+ 1 45.43	61 30 13.30	— 22 36 34.05	52.31		
. .	. .	. . . .	— 1 6.95	1 45.47	61 30 38.60	22 36 59.35	52.31		
. .	. .	. . . .	+ 3 9.07	1 45.78	61 34 54.93	22 41 15.68	52.67		
. .	57.8	. . . .	+ 1 9.07	1 25.43	56 7 35.67	17 13 56.42	58.52		7th magnitude.
. .	. .	. . . .	— 2.46	+ 1 21.00	54 41 19.42	— 15 47 40.17	60.78		
62.3	56.9	. . . .	— 1 52.98	— 24.60	336 52 42.74	+ 62 0 56.51	78.53		
. .	56.9	. . . .	+ 1 2.08	+ 1 21.41	54 47 23.16	— 15 53 43.91	74.77		
. .	. .	. . . .	+ 13.54	+ 1 29.99	57 26 47.36	— 18 33 8.11	— 75.56		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
10–11 33–34	Sun	′ ″ 15 58.47 15 59.40
12–13	Venus	26.36

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in
Sept. 24	1	Nadir 22h. 5m.	3	. .	179 59 57.4	62.1	59.7	61.0	61.0	59.4	60.10*d*	29.7395	.7415	
	2	Moon S. L.	5	I-IX.	45 34 57.7	62.1	60.0	61.1	63.1	59.7	60.62	30.7818	.7759	30.
25	3	Lacaille 8787	3	IV-VI.	68 44 60.1	66.1	66.2	64.5	66.0	61.0	63.98	47.9053	.9064	30.
	4	Lacaille 8790	3	VI-VIII.	" " "	"	"	"	"	"	"	16.7370	.7542	.
	5	Lacaille 8849	5	III-VII.	69 9 59.5	65.2	66.6	64.5	66.1	61.0	63.82	31.8812	.8835	.
	6	Lacaille 8862	5	III-VII.	" " "	"	"	"	"	"	"	37.2926	.3081	30.
	7	Nadir 22h. 3m.	3	. .	179 59 60.0	64.3	65.5	62.9	63.1	58.2	62.33*d*	29.8077	.8007	
	8	Moon S. L.	5	III-VII.	40 4 60.7	66.0	65.9	64.5	66.3	61.3	64.12	28.2406	.2500	30.
26	9	Sun N. L.	4	I-IV.	39 49 58.0	62.0	60.5	59.8	65.0	59.1	60.73	28.2662	.2482	.
	10	Sun S. L.	3	VII-IX.	40 24 61.7	65.8	65.0	63.8	67.2	63.5	64.50	34.0647	.1090	30.
	11	Nadir 12h. 30m.	3	. .	179 59 58.4	60.6	62.3	58.6	61.0	57.1	59.67*d*	29.7135	.7163	.
	12	Mercury, Centre	4	I, IV, VI, IX.	52 24 59.4	62.5	62.4	61.6	65.7	61.4	62.17	33.4998	.4997	30.
	13	β Ursæ Minoris	5	III-VII.	324 9 58.9	60.2	62.7	56.8	63.6	58.8	60.17	27.0674	.0582	30.
	14	β Libræ	2	III, V.	47 44 55.5	56.3	56.1	55.1	60.5	55.6	56.52	29.2340	.2415	30.
	15	Nadir 18h. 45m.	3	. .	179 59 59.0	62.0	63.1	60.2	62.9	58.6	60.97*d*	29.7650	.7665	.
	16	B. A. C. 6568	3	III-VII.	68 54 57.4	61.9	63.2	60.3	65.0	58.5	61.05	30.3177	.3191	30.
	17	B. A. C. 2320, S. P.	3	V½-2½.	307 54 57.5	58.4	59.6	54.2	60.6	55.4	57.62	28.7727	.7637	.
	18	Lacaille 8153	5	III-VII.	75 54 56.5	61.7	63.0	60.8	64.1	56.5	60.43	28.1472	.1641	.
	19	B. A. C. 6726	2	III & VII.	62 34 56.8	60.7	59.7	58.4	62.1	57.0	59.12	28.2825	.3005	.
	20	B. A. C. 6727	2	III & VII.	" " "	"	"	"	"	"	"	27.9450	.9533	.
	21	Lacaille 8209	1	V.	82 29 58.9	63.7	63.0	62.4	64.5	58.9	61.90	35.5170	.5090	.
	22	B. A. C. 6816	3	III-VII.	72 14 57.2	61.8	60.8	60.0	62.5	57.4	59.95	30.6940	.6828	.
	23	τ Aquilæ	5	I-IX.	31 59 56.9	61.0	60.5	58.2	62.3	55.6	59.08	31.6382	.6213	30.
	24	λ Ursæ Minoris	3	2½-V½.	309 59 58.5	61.2	62.0	56.3	62.7	55.9	59.43	28.9820	.9857	.
	25	α¹ Capricorni	3	I, V, IX.	51 49 60.1	64.9	63.8	63.8	66.2	60.8	63.27	34.0083	.0213	.
	26	α² Capricorni	3	I, V, IX.	" " "	"	"	"	"	"	"	29.7120	.7068	.
	27	B. A. C. 7069, (1st *)	3	I, V, IX.	61 29 59.4	62.9	62.2	61.3	63.5	59.3	61.43	32.7550	.7580	.
	28	B. A. C. 7069, (2d *)	2	III, VII.	" " "	"	"	"	"	"	"	31.9255	.9322	.
	29	B. A. C. 7081	3	V-IX.	" " "	"	"	"	"	"	"	23.7737	.7840	30.
	30	B. A. C. 7175	3	III-VII.	78 29 59.0	65.2	64.7	63.4	65.4	60.4	63.02	29.1057	.1235	.
	31	Anon. 20h. 52m. 45s.	3	III-VII.	74 29 60.1	65.6	65.8	65.9	66.2	61.0	64.10	24.5660	.5611	30.
	32	Flora	5	I-IX.	56 4 58.3	64.1	63.9	65.0	64.7	58.9	62.48	30.5350	.5333	30.
	33	Moon N. L.	2	I & III.	34 4 59.1	65.9	66.3	66.9	64.9	59.4	63.75	25.5840	.8817	.
	34	Moon S. L.	1	IX.	34 39 57.9	65.8	64.9	65.4	62.6	57.0	62.27	30.4020	.0506	30.
	35	Nadir 0h. 15m.	2	. .	179 59 57.7	62.5	64.7	64.2	60.1	55.6	60.80	29.7502	.7517	.
	36	Neptune	4	III, V, VIII, IX.	38 24 57.4	64.2	64.6	64.4	64.1	57.8	62.08	34.0538	.0678	.
27	37	α Leonis	5	I-IX.	26 14 58.7	64.0	62.9	60.0	63.9	57.1	61.10	29.2266	.2334	30.
	38	Venus N. L.	5	I-IX.	48 39 58.9	64.0	61.4	62.4	66.3	60.1	62.18	33.0012	.0108	.
28	39	Sun S. L.	4	I-IV.	41 9 59.3	65.0	63.4	62.9	66.9	62.3	63.30	30.7883	.7399	.
	40	Sun N. L.	4	VI-IX.	40 34 61.2	66.9	64.6	63.4	67.7	63.4	64.53	24.9975	.0325	30.
	41	Polaris S. P.	5	5-1	307 29 60.5	62.5	63.0	56.9	66.4	58.7	63.00	29.9840	.9922	30.
	42	Nadir 13h. 25m.	3	. .	179 59 59.7	60.4	62.4	58.0	62.3	57.8	60.10*d*	29.6857	.6898	.
29	43	Lacaille 8849	5	III-VII.	69 9 59.4	65.2	64.7	63.8	67.1	62.8	63.83	31.8300	.8287	30.
	44	Lacaille 8862	5	III-VII.	" " "	"	"	"	"	"	"	37.2490	.2657	.
	45	An. AR. 21h. 36m. 35s.	5	III-VII.	54 19 59.1	63.8	62.2	61.2	66.3	60.0	62.10	40.4502	.4506	.
	46	B. A. C. 7630	5	III-VII.	54 49 60.7	64.9	63.8	62.8	67.2	60.3	63.28	37.3752	.3828	.
	47	O. S. 21821	5	III-VII.	57 29 59.1	65.9	64.0	62.5	67.0	62.5	63.50	38.8486	.8468	30.
	48	B. A. C. 7715	5	III-VII.	67 49 61.0	64.7	64.2	62.3	66.9	63.0	63.68	32.1544	.1702	.
	49	Lacaille 9093	5	III-VII.	61 49 60.6	65.0	63.1	61.2	66.0	60.8	62.78	29.0928	.1055	.
	50	Lacaille 9113	5	III-VII.	65 29 59.9	64.0	63.3	61.6	66.8	60.1	62.62	43.3260	.3391	.
	51	Lacaille 9142	5	III-VII.	61 39 59.0	64.1	63.3	60.6	66.0	60.4	62.23	34.3848	.3926	.
	52	Lacaille 9180	5	III-VII.	63 34 60.5	64.3	62.8	61.3	66.5	60.0	62.57	33.2310	.2469	.
	53	Nadir 22h. 36m.	3	. .	179 59 61.0	65.1	65.2	62.7	65.2	60.3	63.25*d*	29.8336	.8280	
	54	α Piscis Australis	5	III-VII.	69 9 60.8	67.1	67.1	65.0	69.1	63.1	65.37	26.9126	.9171	30.
	55	α Pegasi	5	III-VII.	24 24 61.9	66.0	66.0	63.1	66.5	60.5	64.00	30.7234	.7092	.
30	56	Sun N. L.	4	I-IV.	41 24 59.4	65.6	62.0	62.2	66.7	62.2	63.02	31.2652	.2481	30.
	57	Sun S. L.	4	VI-IX.	41 54 59.0	65.5	63.2	61.2	70.0	60.8	63.28	27.3557	.3944	.
	58	Nadir	3	. .	179 59 58.5	60.6	60.0	57.3	61.0	56.8	59.03	29.6785	.6821	
Oct. 1	59	Sun S. L.	4	I-IV.	42 19 61.0	66.4	63.3	62.9	68.0	61.1	63.78	30.6682	.6253	30.
	60	Sun N. L.	4	VI-IX.	41 49 65.0	69.1	67.1	67.0	70.2	65.0	67.23	34.4257	.4682	.

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
61.8	56.0	29.7160	— 0 33.23	— 58 4.63	44 36 22.76	— 5 42 43.51		N.	
57.0	51.0	29.7264	— 9 29.99	+ 2 27.64	68 38 1.63	29 44 22.38	— 63.55	Ha.	
. .	. .	. . .	+ 6 46.72	2 29.69	68 54 20.39	30 0 41.14	63.80		
. .	. .	. . .	— 1 7.63	2 31.74	69 11 27.93	30 17 48.68	66.70		
57.0	51.8	. . .	— 3 57.71	+ 2 31.33	69 8 37.44	30 14 58.19	— 67.55		Stopped by clouds.
56.5	51.5	. . .	+ 46.28	— 53 42.58	39 12 7.82	0 18 28.57			
. .	. .	29.7296	+ 46.44	+ 42.55	39 51 29.72	1 13 50.91		N.	
60.8	57.4	. . .	— 2 17.30	43.39	40 23 30.59				
62.1	59.0	. . .	— 1 58.21	+ 1 5.83	52 24 9.79	— 13 30 30.54			
62.6	60.6	. . .	+ 1 23.76	— 41.22	324 10 42.71	+ 74 42 56.54	+ 43.15		
. .	60.3	. .	+ 15.30	+ 1 2.87	47 46 14.69	— 8 52 35.44	+ 45.85		
60.1	52.0	. . .	— 18.48	+ 2 29.61	68 57 12.18	— 30 3 32.93	— 24.54		
. .	. .	. . .	— 30.28	— 1 14.57	307 53 12.77	+ 88 59 33.52	+ 47.64		
. .	51.4	. . .	+ 49.07	+ 3 48.10	75 59 37.60	— 37 5 58.35	— 29.24		
. .	. .	. . .	44.81	1 51.87	62 37 35.78	23 43 56.53	35.42		
. .	. .	. . .	+ 55.69	1 51.89	62 37 46.70	23 44 7.45	35.42		
. .	. .	. . .	— 3 1.19	6 54.90	82 33 55.61	43 40 16.36	30.80		
. .	. .	. . .	29.90	3 0.12	72 17 30.17	— 33 23 50.92	36.90		
58.2	49.9	. . .	— 59.30	+ 36.47	31 59 36.25	+ 6 54 3.00	53.15		
. .	. .	. . .	+ 23.32	— 1 9.51	309 59 13.24	+ 88 54 26.01	61.38		
. .	. .	. . .	— 2 14.55	+ 1 14.14	51 49 2.86	— 12 55 23.61	51.07		
. .	. .	. . .	+ 0.72	1 14.45	51 51 18.44	12 57 39.19	51.07		
. .	. .	. . .	— 1 34.95	1 47.30	61 30 13.78	22 36 34.53	52.15		
. .	. .	. . .	— 1 9.07	1 47.33	61 30 39.69	22 37 0.44	52.15		
57.0	48.8	. . .	+ 3 6.41	1 47.66	61 34 55.50	22 41 16.25	52.51		
. .	. .	. . .	19.00	4 40.60	78 35 2.62	39 41 23.37	50.82		
56.2	47.9	. . .	+ 2 42.05	3 4.86	74 35 51.01	35 42 11.76	— 56.34		
52.9	44.8	. . .	— 25.20	+ 1 27.59	56 5 4.87	— 17 11 25.62			
. .	. .	. . .	+ 2 0.65	— 32 22.92	33 34 41.48	+ 5 2 46.85			
51.5	43.5	. . .	— 10.06	— 32 48.86	34 7 3.31				+ 1″.37 applied for defective illumination.
. .	. .	. . .	— 2 16.02	+ 46.72	38 23 32.78	0 30 6.47			
58.7	56.8	29.6866	+ 14.21	28.57	26 15 43.88	+ 12 37 55.37	+ 66.63		The screw at the end of the axis was found loose, which accounts for the large discordances of the nadir and star observations during this month. The maladjustment corrected.
. .	. .	. . .	— 1 44.22	1 12.48	48 39 30.44	— 9 45 51.19			
. .	. .	. . .	— 33.02	44.25	41 10 14.53	— 2 0 34.93			
61.3	63.9	. . .	+ 2 25.92	+ 43.38	40 38 13.83				
62.2	66.1	. . .	— 9.59	— 1 13.90	307 28 39.51	+ 88 35 0.26	— 72.35		
60.0	54.1	29.7243	1 5.97	+ 2 31.45	69 11 29.31	— 30 17 50.06	66.23	Ha.	
. .	. .	. . .	3 56.45	2 31.10	69 8 38.48	30 14 59.23	67.05		
. .	. .	. . .	5 36.30	1 20.61	54 15 46.41	15 22 7.16	72.07		7th magnitude.
. .	. .	. . .	4 0.12	1 22.23	54 47 25.39	15 53 46.14	74.42		8th magnitude.
59.5	53.7	. . .	4 46.02	1 30.86	57 26 48.34	18 33 9.09	75.15		8th magnitude.
. .	. .	. . .	— 1 16.69	2 21.78	67 51 8.77	28 57 29.52	74.05		
. .	. .	. . .	+ 19.40	1 48.40	61 52 10.58	22 58 31.33	77.01		
. .	. .	. . .	— 7 6.87	2 6.49	65 25 2.24	26 31 22.99	77.06		
. .	. .	. . .	2 26.36	1 47.51	61 39 23.38	22 45 44.13	78.93		
. .	. .	. . .	— 1 50.45	1 56.68	63 35 8.80	24 41 29.55	79.49		
59.5	52.6	. . .	+ 1 28.02	2 32.35	69 14 5.74	— 30 20 26.49	81.43		
. .	52.5	. . .	— 30.88	26.49	24 24 59.61	+ 14 28 39.64	— 88.67		Stopped by clouds.
62.5	66.3	. . .	— 48.13	44.46	41 24 59.35	— 2 47 21.08			
. .	. .	29.7130	+ 1 12.69	45.34	41 57 1.31				
61.0	66.4	29.6858	— 29.45	45.92	42 20 20.25	— 3 10 42.19			Through clouds.
. .	. .	. . .	— 2 28.84	+ 45.03	41 48 22.62				

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
9-10	Sun	16 0.44
39-40		16 0.35
56-57		16 0.98
59-60		15 58.81
33-34	Moon	16 10.92

DATE.		Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
[illegible]						° ′ ″	″	″	″	″	″	″	r.	r.	
Oct.	1	1	Nadir 13h. 3m.	3	. .	179 59 59.4	62.4	62.4	59.6	62.5	57.1	60.57*d*	29.7001	.7040	
	3	2	Sun N. L.	4	I–IV.	42 34 61.2	66.4	63.2	61.3	67.8	62.2	63.68	31.5907	.5492	29.
		3	Sun S. L.	4	VI–IX.	43 4 62.5	67.5	63.1	61.7	67.1	61.1	63.83	27.5702	.5904	.
		4	Polaris, S. P.	5	V.	307 29 60.5	63.8	61.5	55.3	65.5	58.7	60.88	29.8756	.8730	29.
		5	Nadir 13h. 28m.	5	. .	179 59 60.3	64.0	62.3	58.3	64.3	59.0	61.37*d*	29.6681	.6716	.
	5	6	Sun S. L.	4	I–IV.	43 54 61.0	66.9	62.5	63.0	65.0	60.9	63.22	34.5302	.4929	30.
		7	Sun N. L.	4	VI–IX.	43 24 61.8	67.7	63.2	63.6	65.3	60.1	63.62	38.5822	.6021	.
		8	Nadir 13h. 20m.	3	. .	179 59 62.0	66.0	65.5	62.3	65.3	58.9	63.33*d*	29.7946	.7954	.
	6	9	Sun N. L.	4	I–IV.	43 44 60.2	66.0	62.9	65.0	64.0	58.8	62.82	32.7645	.7263	30.
		10	Sun S. L.	4	V–IX.	44 14 60.8	67.0	64.1	65.7	65.0	59.0	63.60	28.7015	.7208	.
		11	Polaris, S. P.	5	5–1.	307 29 60.9	66.9	64.0	62.0	66.0	58.0	62.97	29.8380	.8369	.
		12	Nadir 13h. 37m.	3	. .	179 59 60.0	66.1	64.2	63.1	63.4	57.2	62.33*d*	29.7567	.7577	
		13	B. A. C. 8132	5	III–VII.	66 39 60.6	66.8	65.3	66.0	65.5	60.8	64.17	39.1206	.1352	30.
		14	Lacaille 9479	9	I–IX.	62 19 59.7	66.0	62.4	64.5	64.3	59.0	62.65	29.9089	.9179	.
		15	Lacaille 9516	9	I–IX.	70 54 60.4	67.4	63.9	66.3	66.5	61.0	64.25	33.2404	.2661	.
		16	Lacaille 9548	9	I–IX.	62 9 61.1	67.5	64.1	65.7	65.1	61.0	64.08	32.0669	.0845	.
		17	Lacaille 9579	5	III–VII.	65 54 61.1	66.6	64.5	66.3	66.0	60.2	64.12	36.7304	.7224	.
		18	δ Sculptoris	5	III–VII.	67 39 61.3	67.5	65.7	67.4	66.0	61.9	64.97	21.9700	.9776	.
		19	Nadir	3	. .	179 59 61.3	67.5	66.2	66.4	64.6	58.8	64.13*d*	29.8353	.8356	.
		20	γ Pegasi	5	III–VII.	24 29 62.0	68.5	65.2	67.0	65.8	59.2	64.62	34.8592	.8535	30.
		21	*d* Piscium	5	III–VII.	31 29 56.8	63.0	60.0	61.6	61.5	55.2	59.68	35.8776	.8744	.
	7	22	Nadir 19h. 50m.	3	. .	179 59 57.4	60.5	61.0	57.6	61.2	56.7	59.07*d*	29.7015	.7047	
		23	Weisse XX, 46	3	III–VII.	48 4 58.6	61.3	60.5	59.6	65.0	59.4	60.73	26.0070	.0139	29.
		24	B. A. C. 7124	5	III–VII.	326 49 60.3	63.2	63.0	57.6	65.9	59.4	61.57	30.5034	.4742	29.
	8	25	δ Leonis	3	IV–VI.	17 34 60.9	67.5	67.5	66.7	65.6	59.3	64.58	25.7073	.6933	30.
		26	Venus S. L.	5	I–IX.	44 44 60.6	65.8	64.7	64.4	64.7	59.2	63.23	25.0584	.0673	.
		27	Venus N. C.	4	II–VIII.	" " "	"	"	"	"	"	"	26.9552	.9585	30.
	9	28	Sun N. L.	4	I–IV.	44 49 57.4	62.7	60.7	60.8	61.7	56.3	59.93	25.2372	.2220	.
		29	Sun S. L.	4	VI–IX.	45 24 59.8	64.5	64.1	62.9	64.3	59.3	62.48	20.8918	.9232	30.
		30	Polaris, S. P.	5	5–1.	307 29 60.0	64.0	63.8	58.5	63.1	58.7	61.35	29.9110	.9149	.
		31	Nadir 13h. 25m.	3	. .	179 59 58.5	63.2	63.0	60.9	61.5	57.4	60.75*d*	29.7870	.7885	
		32	β Ursæ Minoris	3	IV–VI.	324 9 59.2	62.2	63.5	57.7	63.4	58.3	60.72	27.0087	.0035	30.
		33	α Coronæ Borealis	5	I–IX.	11 44 56.6	60.9	60.3	57.8	61.2	56.6	58.90	34.0624	.0576	.
		34	α Serpentis	3	III–VII.	31 59 58.3	62.5	59.9	58.8	63.2	58.8	60.25	26.9150	.9139	30.
		35	ε Serpentis	2	VII–IX.	33 59 57.4	61.4	60.6	58.7	62.3	58.8	59.87	30.8285	.8349	.
		36	δ Ursæ Minoris	5	1–5.	312 19 58.6	59.9	61.2	55.7	62.2	56.1	58.95	33.3774	.3810	30.
		37	α Lyræ	5	I–IX.	0 14 59.8	62.3	61.2	58.2	62.5	59.4	60.57	32.2024	.1940	.
		38	51 Cephei S. P.	5	5–1.	306 9 60.4	61.3	61.8	56.5	63.4	59.2	60.43	31.1536	.1672	.
		39	Nadir 18h. 45m.	2	. .	179 59 58.8	61.1	62.5	58.4	61.5	58.9	60.20	29.7730	.7636	
		40	Lacaille 8191	3	I–V.	76 39 57.8	61.6	62.7	59.4	64.7	59.5	60.95	39.3883	.3989	.
		41	Lacaille 8196	3	V–IX.	" " "	"	"	"	"	"	"	26.8837	.9084	30.
		42	τ Aquilæ	5	I–IX.	31 59 57.3	60.0	58.9	55.8	62.3	57.4	58.62	31.6178	.6012	.
		43	λ Ursæ Minoris	3	2–4.	309 59 58.3	59.9	60.8	53.5	61.6	56.1	58.37	29.0833	.0921	.
		44	Lacaille 8385	3	IV–VI.	75 44 59.4	63.0	63.6	60.3	64.5	59.9	61.78	35.7927	.7867	.
		45	κ Cephei	3	IV–VI.	321 34 59.3	61.3	64.1	57.8	64.0	58.9	60.90	27.8830	.8682	.
		46	κ Cephei, (Comp.)	2	IV½–V½.	" " "	"	"	"	"	"	"	27.7640	.7493	.
		47	B. A. C. 7071	5	I–IX.	67 54 59.5	63.2	63.5	60.7	65.2	62.0	62.35	30.9810	.9991	.
		48	B. A. C. 7124	3	IV–VI.	326 49 59.8	62.1	63.3	56.1	64.7	58.6	60.77	30.4450	.4347	.
		49	α Cygni	5	III–VII.	354 4 60.3	63.5	64.3	59.1	64.9	59.9	62.00	28.6338	.6125	30.
		50	μ Aquarii	5	I–IX.	48 24 59.5	61.8	60.9	59.7	64.5	59.3	60.95	35.7730	.7678	.
		51	B. A. C. 7299	5	IV–VI.	318 54 60.4	62.5	64.1	57.3	64.2	60.0	61.42	36.0976	.0948	.
		52	Lacaille 8722	5	II–VIII.	75 9 60.3	63.9	63.6	62.0	64.4	60.9	62.52	31.6930	.6848	30.
		53	β Cephei (Ref.)	5	III–VII.	211 4 58.3	60.4	60.6	58.2	60.7	59.4	59.60	31.7360	.7451	.
		54	79 Draconis (Ref.)	3	III–V.	214 9 58.0	60.1	60.7	58.6	60.6	58.2	59.37	30.5237	.5252	.
		55	79 Draconis	3	VII–IX.	325 49 56.9	58.5	60.6	55.6	61.1	55.7	58.07	28.9673	.8847	30.
		56	θ Aquarii	5	I–IX.	47 19 57.7	60.2	60.2	58.0	62.6	58.4	59.52	29.7678	.7616	.
		57	ζ Pegasi	5	I–IX.	151 14 57.2	60.9	61.0	59.3	62.0	56.9	59.55	30.8728	.8746	.
		58	ι Cephei	5	III–VII.	333 24 59.6	63.0	65.6	59.5	64.7	58.6	61.83	30.3176	.3108	30.
		59	α Pegasi (Ref.)	5	I–IX.	155 34 59.1	64.1	62.3	60.8	63.9	58.4	61.43	28.9606	.9699	.
		60	λ Draconis, S. P.	5	VII–III.	288 59 59.3	63.0	61.6	58.4	62.9	56.3	60.25	27.4186	.4411	30.

THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR Micrometer.	CORRECTIONS FOR Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
65.0	65.0	29.6279	— 60.28	+ 45.99	42 34 49.39	— 3 57 12.76		Ha.	Extremely unsteady.
. .	. .	. . .	+ 1 3.88	+ 46.91	43 6 54.62				
66.0	66.0	. . .	— 7.68	— 1 13.19	307 28 40.01	+ 88 35 0.76	— 73.97		All at wire V.
61.0	54.5	29.6892	2 30.60	+ 59.78	43 53 22.40	+ 4 43 38.44			Sun excessively tremulous and unsteady.
. .	. .	. . .	4 39.45	48.81	43 21 12.98				
56.0	58.2	29.6834	— 1 35.39	49.20	43 44 16.63	— 5 6 41.02			
. .	. .	. . .	+ 30.17	+ 50.18	44 16 23.95				
. .	56.9	. . .	— 4.81	— 1 15.23	307 28 42.93	+ 88 35 3.68	75.16		
53.0	47.6	29.7039	4 55.70	+ 2 14.99	66 37 23.39	— 27 43 44.14	83.66		
. .	. .	. . .	6.71	1 51.72	62 21 47.66	23 28 8.41	85.13		
. .	. .	. . .	1 51.69	2 48.13	70 56 0.69	32 2 21.44	83.88		
. .	. .	. . .	1 14.64	1 50.86	62 10 40.30	23 17 1.05	85.78		
. .	. .	. . .	— 3 40.05	2 10.49	65 53 34.56	26 59 55.31	85.43		
. .	. .	. . .	+ 4 2.24	2 22.70	67 46 29.91	28 52 50.66	85.34		
52.5	47.2	. . .	— 2 41.46	26.77	24 27 49.93	— 14 25 49.32	89.91		
. .	. .	. . .	— 3 13.46	36.00	31 27 22.22	+ 7 26 17.03	89.26		Stars excessively unsteady; clouds.
59.7	59.2	29.7344	+ 1 56.65	+ 1 3.71	48 8 1.09	— 9 14 21.84	50.30	N.	
. .	59.1	. . .	— 23.19	— 37.39	326 49 0.99	+ 72 4 38.26	— 71.98		
52.5	55.8	29.7601	+ 2 7.50	+ 18.37	17 37 30.45	+ 21 16 8.80	+ 76.24		
. .	. .	. . .	2 27.13	36.62	40 48 6.98	— 1 53 58.08			
54.4	57.8	. . .	1 27.84	36.60	40 47 7.67				Good observation; limb so nearly vertical that no correction for defective illumination is applied.
. .	. .	. . .	+ 2 22.28	50.96	44 53 13.17	— 6 15 36.31			
57.5	60.1	. . .	— 36.47	+ 51.95	45 25 17.96	+ 88 35 2.75	— 76.44		Good observation of Sun.
. .	60.4	. . .	— 4.85	— 1 14.49	307 28 42.00				
60.8	61.7	. . .	+ 1 26.43	— 41.13	324 10 46.02	74 42 53.23	+ 47.08		
. .	. .	. . .	— 2 14.74	+ 11.81	11 42 55.97	27 10 43.28	34.72		
61.2	62.1	. . .	+ 1 29.24	35.63	32 2 5.12	6 51 34.13	34.93		
. .	. .	. . .	— 33.69	+ 38.40	34 0 4.58	4 53 34.67	+ 33.31		
61.0	58.4	. . .	1 53.53	— 1 2.97	312 17 2.45	86 36 36.80	— 28.78		
. .	. .	. . .	1 16.31	+ 0.23	0 13 44.49	38 39 54.76	— 33.16		
. .	57.5	. . .	44.11	— 1 18.49	306 7 57.83	+ 87 14 18.58	+ 34.62		
. .	. .	. . .	— 5 2.21	+ 3 57.50	76 38 56.24	— 37 45 16.99	— 30.78		Recorded circle reading 76° 44′.
59.7	54.5	. . .	+ 1 29.42	3 59.48	76 45 29.85	— 37 51 50.60	30.97		
. .	. .	. . .	— 57.72	+ 36.18	31 59 37.08	+ 6 54 2.17	53.44		
. .	. .	. . .	+ 20.94	— 1 8.98	309 59 10.33	+ 88 54 28.92	63.37		
. .	52.9	. . .	— 3 8.96	+ 3 43.60	75 45 36.42	— 36 51 57.17	41.70		Micrometer 1 rev. less than on October 21.
. .	. .	. . .	+ 59.31	— 45.98	321 35 14.23	+ 77 18 25.02	67.58		
. .	. .	. . .	+ 1 3.05	— 45.98	321 35 17.97	+ 77 18 21.28	67.58		
. .	. .	. . .	— 38.85	+ 2 21.92	67 56 45.42	— 29 3 6.17	49.25		
. .	. .	. . .	— 21.15	— 38.01	326 49 1.61	+ 72 4 37.64	72.22		
58.5	52.0	. . .	+ 35.98	— 6.01	354 5 31.97	+ 44 48 7.28	72.50		
. .	. .	. . .	— 3 38.36	+ 1 5.34	48 22 57.93	— 9 29 18.68	61.66		
. .	. .	. . .	3 18.61	— 50.81	318 50 52.00	+ 80 2 47.25	76.99		
57.5	51.0	. . .	1 0.34	+ 3 36.17	75 12 38.35	— 36 18 59.10	57.90		Wires III-VII omitted.
. .	. .	. . .	1 2.24	35.12	211 4 32.48	+ 69 58 11.73	83.79		
. .	. .	. . .	— 23.99	+ 39.57	214 10 14.95	73 3 54.20	87.11		Image very indistinct.
56.5	50.4	. . .	+ 27.45	— 39.57	325 49 45.95	+ 73 3 53.30	87.11		
. .	50.6	. . .	— 0.05	+ 1 3.18	47 21 2.65	— 8 27 23.40	79.77		
. .	. .	. . .	34.94	— 32.04	151 13 52.57	+ 10 7 31.82	87.06		
55.4	49.5	. . .	— 17.26	29.24	333 24 15.33	65 29 23.92	91.81		
. .	. .	. . .	+ 24.78	26.54	155 34 59.67	34 28 38.92	— 89.67		
54.7	48.7	. . .	+ 1 12.71	— 2 48.20	288 58 24.76	+ 70 4 45.51	+ 86.32		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
2–3	Sun	16 2.62
6–7		16 4.71
9–10		16 3.67
28–29		16 2.40
26–27	Venus	29.66

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	29.7601	− 3 12.28	− 45.66	322 1 3.81	+ 76 52 35.44	− 90.64	N.	
. .	48.8	. . . .	1 17.78	+ 46.40	38 32 7.15	0 21 32.10			Thermometer read at 0h. 27m.
56.6	50.3	29.7536	6.21	− 25.56	336 24 43.05	+ 62 28 56.20	+ 85.72		
. .	. .	. . . .	2 2 13	+ 36.35	43 47 39.46	− 4 53 31.38			
55.5	51.7	. . . .	1 4.66	36.32	43 46 41.96				Bar. supposed 30.158.
. .	. .	. . . .	2 35.31	55.01	46 33 31.95	− 7 23 46.95			
56.2	53.6	. . . .	27.59	+ 53.93	46 1 20.45				
. .	53.7	. . . .	− 2.67	− 1 15.58	307 28 43.98	88 35 4.73	− 77.50		Hour angles from +7m. 30s. *to* + 11m. 18s.
58.3	55.7	. . . .	+ 1 30.09	− 41.65	324 10 46.47	74 42 52.78	+ 48.01		
. .	. .	. . . .	− 2 16.48	+ 11.96	11 42 56.48	+ 27 10 42.77	35.19		Wires III and VII omitted.
59.0	56.7	. . . .	+ 1 30.52	36.05	32 2 5.94	6 51 33.31	35.13		
. .	. .	. . . .	− 34.88	38.87	34 0 5.06	4 53 34.19	+ 33.48		
58.2	53.7	. . . .	1 56.37	1 3.57	312 17 3.21	86 36 36.04	− 28.68		
. .	. .	. . . .	1 15.62	+ 0.23	0 13 44.81	38 39 54.44	− 33.06		
. .	. .	. . . .	43.80	− 1 19.22	306 7 58.43	87 14 19.18	+ 34.58		
. .	52.4								
57.0	49.9	. . . .	2 13.58	− 39.68	325 47 6.27	+ 73 6 32.98	− 51.45		
. .	. .	. . . .	− 2 55.70	+ 1 0.85	46 13 5.55	− 7 19 26.30	40.03		
. .	. .	. . . .	+ 8.05	+ 2 14.75	66 42 23.10	27 48 43.85	36.98		Magnitude 7.4.
55.4	48.1	. . . .	− 1 58.21	− 2 57.22	71 55 59.14	33 2 19.89	43.94		
. .	. .	. . . .	40.93	+ 2 23.57	67 56 44.77	− 29 3 5.52	49.13		Magnitude 7.2.
. .	. .	. . . .	− 22.85	− 38.37	326 49 1.18	+ 72 4 38.07	72.57		
. .	. .	. . . .	+ 3 19.67	+ 51.38	221 9 12.33	80 2 51.58	77.48		
53.7	45.7	. . . .	− 3 19.77	− 51.38	318 50 49.93	80 2 49.32	77.48		Readings discordant by r. 0.101.
. .	. .	. . . .	− 1 2.37	+ 35.55	211 4 33.26	69 58 12.51	84.32		
. .	44.5	. . . .	+ 59.50	− 35.55	328 55 26.78	69 58 12.47	84.32		
. .	. .	. . . .	− 27.44	+ 40.10	214 10 16.18	73 3 55.43	87.77		
. .	44.1	. . . .	+ 24.64	− 40.10	325 49 45.72	+ 73 3 53.53	87.77		
56.0	59.1	29.7702	+ 2.07	+ 55.25	46 56 1.44	− 7 46 17.71		Ha.	
. .	. .	. . . .	− 2 6.72	+ 54.18	46 23 52.75				
54.5	49.0	29.7716	− 37.25	− 48.55	140 23 35.82	0 42 44.93	83.25		
. .	. .	. . . .	+ 1 40.00	+ 48.73	39 42 32.18	0 48 52.93	84.06		
. .	. .	. . . .	− 3 16.06	1 49.88	61 58 37.47	23 4 58.22	80.92		
54.0	48.0	. . . .	4 21.44	2 22.31	67 43 5.67	28 49 26.42	81.19		
. .	. .	. . . .	3 7.99	3 0.37	72 9 56.71	33 16 17.46	81.03		
. .	. .	. . . .	3 53.39	2 37.02	69 38 49.05	30 45 9.80	82.20		
. .	. .	. . . .	3 55.06	2 7.65	65 23 16.86	26 29 37.61	83.60		
. .	. .	. . . .	− 1 14.79	1 51.03	62 10 40.66	23 17 1.41	84.74		
. .	. .	. . . .	+ 4 3.33	2 22.98	67 46 31.79	28 52 52.54	84.09		
53.0	47.1	. . . .	− 51.26	2 13.14	66 16 27.38	− 27 22 48.13	84.68		
. .	. .	. . . .	2 13.77	10.99	10 33 4.20	+ 28 20 35.05	91.43		
. .	. .	. . . .	2 42.62	26.83	24 27 49.91	14 25 49.34	90.29		
. .	. .	. . . .	1 12.77	46.84	38 34 38.77	+ 0 19 0.48			
. .	. .	. . . .	1 57.52	55.43	43 14 2.18	− 4 20 22.93	87.52		
52.5	46.3	. . . .	4 5.07	1 32.80	57 37 32.78	18 43 53.53	85.57		
62.0	63.5	29.8216	− 5.20	32.35	42 20 30.40	− 3 27 17.49			
. .	. .	. . . .	+ 46.60	+ 33.23	42 21 23.08				
64.5	66.6	. . . .	− 0.62	− 1 13.07	307 28 47.61	+ 88 35 8.36	78.90		
65.0	67.1	. . . .	3 6.41	+ 55.56	47 52 51.48	− 9 15 16.82			
. .	. .	. . . .	58.66	56.67	48 25 0.66				
66.5	68.5	29.7746	− 1 17.14	0.24	0 13 45.75	+ 38 39 53.50	32.93		
. .	67.8	. . . .	+ 45.80	5.58	5 40 54.35	33 12 44.90	36.54		
66.5	65.3	. . . .	+ 45.26	+ 30.73	28 36 19.01	+ 10 17 20.24	− 49.11		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
7–8 32–33 54–55	Sun	16 5.75 16 4.48 16 4.59
5–6 51–52	Venus	28.83 26.34

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 17	1	α Aquilæ	5	III-VII.	30 24 60.6	63.1	61.9	58.5	67.0	63.0	62.35	35.3380	.3453	. .
	2	β Aquilæ	5	III-VII.	32 49 60.1	64.0	61.7	58.0	66.2	62.0	62.00	32.5352	.5249	. .
	3	λ Ursæ Minoris	5	V.	309 59 60.0	61.6	61.5	53.5	63.9	59.1	59.93	29.2386	.2509	. .
	4	a^1 Capricorni	3	IV-VI.	51 49 60.2	63.2	61.0	58.2	65.6	62.0	61.70	33.9140	.9147	. .
	5	a^2 Capricorni	3	V-VII.	" " "	"	"	"	"	"	"	29.5627	.5580	29.950
	6	B. A. C. 7039	3	IV-VI.	63 24 59.8	61.4	59.3	57.0	64.0	60.5	60.33	23.9433	.9465	. .
	7	B. A. C. 7093	5	III-VII.	66 4 60.0	61.0	61.3	57.0	64.6	62.0	60.98	28.0420	.0531	. .
	8	B. A. C. 7136	5	III-VII.	" " "	"	"	"	"	"	"	41.6216	.6120	. .
	9	B. A. C. 7203	5	III-VII.	66 39 59.7	62.0	61.9	57.9	65.0	62.0	61.42	23.0380	.0490	. .
	10	B. A. C. 7327	3	IV-VI.	62 34 59.4	61.9	60.0	56.4	63.8	61.7	60.53	33.0046	.0113	29.968
18	11	Venus S. L.	3	I, V, IX.	41 49 61.3	65.6	64.1	61.0	61.8	63.6	63.73	24.8173	.8124	29.936
	12	Venus N. C.	2	III-VII.	" " "	"	"	"	"	"	"	26.3250	.3351	"
19	13	Sun N. L.	4	I-IV.	48 34 60.4	64.3	62.7	62.1	66.1	62.4	63.00	28.7268	.6893	. .
	14	Sun S. L.	4	VI-IX.	49 9 58.2	62.9	61.4	59.9	64.6	61.9	61.48	34.0718	.1142	29.982
	15	Nadir 13h. 52m.	3	. .	179 59 57.8	59.8	60.8	57.4	60.4	58.5	59.12	29.7738	.7644	
	16	Nadir 19h. 20m.	3	. .	179 59 59.8	62.1	63.6	58.9	63.0	59.8	61.20*d*	29.8030	.8034	
	17	Lacaille 8191	3	IV-VI.	76 39 58.7	62.1	62.9	59.6	64.7	59.8	61.30	39.4370	.4390	. .
	18	Lacaille 8196	3	VI, VIII, IX.	" " "	"	"	"	"	"	"	26.8973	.9307	30.004
	19	B. A. C. 6816	3	IV-VI.	72 14 58.5	61.1	60.6	58.0	62.7	59.0	59.98	30.6383	.6265	. .
	20	Moon S. L.	5	I-IX.	56 9 59.4	61.4	61.7	60.7	65.1	60.5	61.47	30.2410	.2539	. .
	21	Lacaille 8394	1	V.	70 24 60.9	64.7	64.0	64.6	66.2	63.2	63.93	23.9010	.9002	. .
	22	ψ Capricorni	5	I-IX.	64 39 60.4	62.9	64.0	61.8	63.9	60.4	62.23	35.6428	.6413	30.014
	23	I Piscis Australis	5	III-VII.	71 39 59.5	62.4	62.1	60.2	62.9	60.5	61.27	33.7472	.7410	. .
	24	A Capricorni	5	III-VII.	64 24 59.9	62.3	62.8	61.1	62.0	58.6	61.12	30.9752	.9826	30.011
	25	B. A. C. 7436	3	III-VII.	63 14 58.4	62.3	60.6	59.5	61.1	58.1	59.98	27.8790	.8811	. .
	26	B. A. C. 7492	5	I-IX.	62 54 57.2	60.2	59.5	58.6	60.0	57.7	58.87	29.5238	.5265	. .
	27	45 Capricorni	5	I-IX.	54 14 60.5	64.9	64.0	63.1	65.0	60.8	63.05	31.0046	.0169	30.013
	28	Lacaille 8941	5	III-VII.	62 44 60.3	63.9	62.7	62.0	63.6	60.2	62.12	28.3280	.3404	. .
	29	Lacaille 8968	3	IV-VI.	65 59 61.0	63.8	65.5	62.3	65.9	61.5	63.33	32.3483	.3574	. .
	30	Lacaille 9005	3	IV-VI.	66 34 59.6	62.9	63.6	61.8	64.0	59.8	61.95	32.3047	.3166	. .
	31	Weisse XXII, 118	5	III-VII.	54 39 58.1	62.9	61.7	60.8	63.3	56.8	60.60	82.7828	.7777	. .
	32	Oeltzen S. 22117	1	V.	60 9 59.4	63.7	64.6	62.0	64.5	60.6	62.47	29.9110	.9109	. .
	33	56 Aquarii	3	III-VII.	54 9 59.4	64.6	63.7	61.7	65.5	59.0	62.32	31.8550	.8536	30.027
	34	Flora	3	I, V, IX.	56 19 59.8	65.5	64.4	64.2	66.4	61.5	63.63	33.8793	.8871	. .
	35	Nadir 23h. 5m.	3	. .	179 59 58.9	63.0	64.3	62.8	60.9	58.4	61.38*d*	29.8564	.8557	
	36	Anon. 23h. 13m. 16s.	1	V.	78 4 58.5	65.1	64.7	62.9	64.3	59.2	62.45	32.7810	.7721	. .
	37	B. A. C. 8213 (ref.)	4	. .	227 39 59.5	62.5	64.0	61.4	61.1	61.4	61.65	31.8458	.8456	. .
	38	B. A. C. 8213	3	. .	312 19 61.0	62.4	66.2	60.5	63.1	57.5	61.78	27.8777	.8538	. .
	39	ω Piscium (ref.)	3	I-III.	147 14 56.0	61.5	61.6	59.7	60.5	56.4	59.28	32.1227	.1217	. .
	40	ω Piscium	3	VII-IX.	32 44 56.7	63.9	62.0	60.8	63.2	56.6	60.53	27.5127	.5168	30.032
	41	γ Pegasi (ref.)	2	I-IV.	155 34 56.1	60.4	60.9	59.6	59.9	55.0	58.65	34.2785	.2847	. .
	42	γ Pegasi	3	VII-IX.	24 24 63.8	68.6	68.1	67.1	67.5	61.0	66.02	25.4430	.4495	. .
	43	Neptune	3	III-VII.	38 34 59.5	65.8	65.2	63.9	65.5	60.0	63.32	25.1879	.2000	. .
	44	Mercury S. L.	2	V, VIII.	42 9 59.5	66.5	64.4	65.5	64.9	59.6	63.40	25.3695	.5249	30.096
	45	Mercury N. C.	2	VI-IX.	" " "	"	"	"	"	"	"	25.9265	.7867	. .
	46	Venus S. L.	5	I-IX.	41 39 61.0	70.7	67.0	69.4	68.0	61.3	66.23	29.9316	.9339	30.110
	47	Venus N. C.	4	II-VIII.	" " "	"	"	"	"	"	"	31.5038	.4978	. .
	48	Polaris S. P.	5	V.	307 29 60.0	66.0	64.0	61.0	64.0	57.5	62.08	29.8196	.8132	30.100
20	49	Sun S. L.	4	I-IV.	49 29 60.2	67.1	65.0	66.0	67.0	61.9	64.53	31.1312	.1172	30.100
	50	Sun N. L.	4	VI-IX.	48 59 61.0	67.8	65.0	66.4	67.0	61.1	64.72	35.3038	.3480	. .
	51	Nadir 14h. 17m.	3	. .	179 59 61.0	66.6	65.8	63.8	64.8	58.7	63.45*d*	29.8470	.8464	
	52	Moon S. L.	5	III-VII.	52 9 60.5	64.1	63.0	62.2	64.5	61.8	62.68	31.3162	.3235	30.082
	53	Lacaille 8890	5	III-VII.	64 29 61.4	65.5	63.7	63.6	64.8	60.6	63.27	20.9902	.9985	30.090
	54	Lacaille 8902	5	III-VII.	" " "	"	"	"	"	"	"	42.6674	.6572	.
	55	Lacaille 8907	1	IX.	67 34 62.0	68.0	67.0	67.0	68.9	64.0	66.15	27.5020	.5413	. .
	56	Anon. 21h. 40m. 19s.	5	III-VII.	" " "	"	"	"	"	"	"	17.3542	.3656	. .
	57	Lacaille 8937	5	III-VII.	" " "	"	"	"	"	"	"	48.6928	.6837	. .
	58	Lacaille 8983	5	III-VII.	67 4 61.0	67.9	64.9	64.9	67.5	62.6	64.80	24.1010	.1148	30.096
	59	Nadir 22h. 4m.	3	. .	179 59 60.4	65.1	65.0	63.7	63.1	59.9	62.87*d*	29.8743	.8733	
	60	O. Arg. S. 22117	5	III-VII.	60 14 60.8	66.8	65.0	64.5	66.1	62.3	64.25	39.4446	.4464	. .
	61	56 Aquarii	5	III-VII.	54 9 60.5	66.8	64.4	63.8	67.0	60.3	63.80	31.8442	.8415	. .

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	29.7746	− 2 54.66	+ 33.05	30 22 40.74	+ 8 30 58.51	− 49.94	Ha.	
. .	. .	. . . .	− 1 26.23	+ 36.37	32 49 12.14	6 4 27.11	50.57		
. .	. .	. . . .	+ 16.42	− 1 7.20	309 59 9.15	+ 88 54 30.10	63.83		All at wire V.
. .	. .	. . . .	− 2 9.79	+ 1 11.70	51 49 3.61	− 12 55 24.36	50.63		
66.5	64.2	. . . .	+ 6.79	1 11.79	51 51 20.28	12 57 41.03	50.71		
. .	. .	. . . .	3 2.73	1 52.76	63 29 55.82	24 36 16.57	49.45		
. .	. .	. . . .	+ 53.98	2 6.94	66 8 1.90	27 14 22.65	50.59		
. .	. .	. . . .	− 6 11.13	2 6.27	66 0 56.12	27 7 16.87	51.95		
. .	. .	. . . .	+ 3 30.87	2 10.85	66 45 43.14	27 52 3.89	54.29		
66.0	63.0	. . . .	− 1 41.48	1 48.69	62 35 7.74	23 41 28.49	60.19		2 stars in the field.
66.0	58.0	29.7898	+ 2 36.05	34.01	41 53 13.79	2 59 8.72		N.	
66.0	58.0	. . . .	1 48.32	33.97	41 52 26.02				Cloudy. Cusp faint and uncertain.
. .	. .	. . . .	+ 34.51	57.82	48 36 35.33	9 59 0.69			
66.0	62.5	. . . .	− 2 15.90	58.97	49 8 44.55				
. .	. .	. . . .	− 5 2.54	3 55.84	76 38 54.60	37 45 15.35	30.72		
64.7	57.3	. . . .	+ 1 29.65	3 57.74	76 45 28.69	37 51 49.44	30.88		
. .	. .	. . . .	− 26.23	+ 2 57.53	72 17 31.28	33 23 52.03	36.07		
. .	56.0	. . . .	− 14.57	− 63 47.83	55 5 59.07	16 12 19.82			
. .	. .	. . . .	+ 3 4.65	+ 2 40.87	70 30 49.45	31 37 10.20	43.45		
62.3	55.4	. . . .	− 3 3.46	2 0.86	64 38 59.63	25 45 20.38	53.83		Magnitude 4.8.
. .	. .	. . . .	2 3.89	2 51.98	71 40 49.36	32 47 10.11	55.41		Magnitude 4.5.
61.6	54.5	. . . .	− 37.40	1 59.95	64 26 23.67	25 32 44.42	59.45		
. .	. .	. . . .	+ 59.84	1 54.37	63 17 54.19	24 24 14.94	64.35		Magnitude 7.0.
. .	. .	. . . .	+ 8.25	1 52.70	62 56 59.82	24 3 20.57	66.61		Magnitude 6.8.
60.3	53.0	. . . .	− 38.47	1 20.29	54 15 44.87	15 22 5.62	71.37		Magnitude 6:
. .	. .	. . . .	+ 45.44	1 52.07	62 47 39.63	23 54 0.38	70.04		
. .	. .	. . . .	− 1 20.51	2 9.23	66 0 52.05	27 7 12.80	70.12		
. .	53.0	. . . .	1 19.22	2 12.83	66 35 55.56	27 42 16.31	71.13		
. .	. .	. . . .	1 33.69	1 21.52	54 39 48.43	15 46 9.18	76.90		Magnitude 6.7.
. .	. .	. . . .	3.79	1 40.78	60 11 39.46	21 18 0.21	76.69		Magnitude 7: Argelander's mag. is 8.9.
59.5	52.5	. . . .	1 4.71	1 20.12	54 10 17.73	15 16 38.48	79.45		Magnitude 5.7.
. .	51.5	. . . .	2 8.46	1 26.94	56 19 22.11	17 25 42.86			
. .	. .	. . . .	1 33.51	4 28.27	78 7 57.21	39 14 17.96	78.98		Magnitude 9:
.	. .	. . . .	− 1 4.46	+ 1 3.81	227 40 1.00	86 33 40.25	93.34		Hour angles — 2m. 8s. to 0s.
. .	50.4	. . . .	+ 1 0.70	− 1 3.83	312 19 58.65	− 86 33 40.60	93.34		Hour angles 1m. 52s., 2m. 29s., 3m. 7s.
. .	. .	. . . .	− 1 13.12	− 37.52	147 13 8.64	+ 6 6 47.89	90.20		
57.8	50.0	. . . .	+ 1 11.27	+ 37.52	32 46 49.32	6 6 49.93	90.20		
. .	. .	. . . .	− 2 20.92	− 26.54	155 32 11.19	14 25 50.44	90.88		
. .	. .	. . . .	+ 2 16.08	+ 26.54	24 27 48.64	14 25 50.61	90.88		
. .	49.6	. . . .	2 23.90	46.45	38 38 13.67	+ 0 15 25.58			
57.4	58.0	29.7364	2 12.04	45.04	42 13 0.48	− 3 19 16.89			Limb observed with one wire. Cusp with the other. Good observation.
. .	. .	. . . .	+ 2 3.83	45.04	42 12 52.27				
54.5	55.0	. . . .	− 6.19	34.40	41 40 34.44			Ha.	Exceedingly unsteady.
. .	. .	. . . .	55.22	+ 33.31	41 39 44.32	− 2 46 30.13			
58.5	59.0	. . . .	2.41	− 1 14.71	307 28 44.96	+ 88 35 5.71	80.14		All at wire V.
59.5	60.1	. . . .	43.30	+ 1 0.44	49 30 21.67	− 10 20 35.59			
. .	. .	. . . .	2 55.94	+ 59.23	48 58 8.01				
60.0	53.5	29.7818	− 48.34	− 61 35.03	51 7 39.31	12 14 0.06			
59.0	52.0	. . . .	+ 4 35.38	+ 2 1.81	64 36 40.46	25 43 1.21	67.34		
. .	. .	. . . .	− 6 43.68	2 0.80	64 25 20.39	25 31 41.14	68.00		
. .	. .	. . . .	+ 1 10.25	2 20.29	67 38 36.69	28 44 57.44	67.05		
. .	. .	. . . .	+ 6 29.29	2 20.93	67 43 56.37	28 50 17.12	67.63		8th magnitude.
. .	. .	. . . .	− 9 52.63	2 19.06	67 27 32.58	28 33 53.33	68.27		
58.5	51.6	. . . .	+ 2 57.68	2 17.21	67 10 19.69	28 16 40.44	70.12		
. .	. .	. . . .	− 5 3.02	1 41.31	60 11 42.54	21 18 3.29	76.56		8th magnitude.
. .	. .	. . . .	− 1 4.58	+ 1 20.54	54 10 19.76	− 15 16 40.51	− 79.35		Two stars in the field.

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
13–14 49–50	Sun	16′ 4″.61 16 6.83
11–12 46–47	Venus	24.32 25.06
44.45	Mercury . . .	4.34

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 20	1	Lacaille 9290	5	III–VII.	68 44 60.0	68.0	65.0	66.0	67.0	62.2	64.70	29.3518	.3636	. .
	2	Anon. 22h. 53m. 40s.	5	III–VII.	56 29 59.2	64.9	63.0	63.2	65.7	60.2	62.70	32.3862	.3932	. .
	3	O. S. 22634	5	III–VII.	60 54 59.0	65.4	63.0	62.4	65.3	59.8	62.48	46.2462	.2615	. .
	4	Anon. 23h. 8m. 27s.	5	III–VII.	“ “ “	“	“	“	“	“	“	28.2934	.3074	30.088
	5	Venus S. L.	4	I, IV, VI, IX.	41 29 60.4	66.2	63.8	63.5	66.2	61.8	63.65	32.8390	.8350	. .
	6	Venus N. C.	3	II, V, VIII.	“ “ “	“	“	“	“	“	“	34.3643	.3715	30.137
	7	Mercury S. L.	3	I, IV, VII.	42 4 58.9	64.2	61.1	60.3	65.1	59.0	61.43	31.9017	32.0442	. .
	8	Mercury N. C.	3	III, VI, IX.	“ “ “	“	“	“	“	“	“	32.4783	.3336	30.143
	9	Nadir 13h. 0m.	2	I, II.	179 59 57.4	61.0	61.3	58.6	60.5	57.5	59.38	29.7525	.7546	. .
	10	Polaris S. P.	5	5–1	307 29 59.7	62.0	61.6	56.7	63.8	58.5	60.38	29.7622	.7561	. .
′ 21	11	Sun N. L.	5	I–IX.	49 19 59.7	64.9	62.5	62.1	67.8	62.9	63.32	32.4572	.4595	30.139
	12	Nadir 19h. 10m.	3	. .	179 59 59.5	61.0	61.8	57.6	62.9	60.0	60.47	29.8250	.8252	
	13	κ Aquilæ	5	I–IX.	46 14 58.8	60.0	59.8	55.5	64.2	58.5	59.47	35.3206	.3334	30.170
	14	γ Aquilæ	5	I–IX.	28 34 59.4	61.1	61.5	57.8	66.0	60.0	60.97	28.2686	.2760	. .
	15	Lacaille 8243	2	VI, VIII.	66 39 57.9	59.0	60.4	56.2	63.5	59.5	59.42	29.3985	.4217	. .
	16	B. A. C. 6829	5	III–VII.	69 49 57.3	59.6	59.5	56.1	63.2	59.9	59.27	36.1042	.1141	. .
	17	B. A. C. 6864	3	IV–VI.	61 59 59.2	60.1	59.4	56.5	64.0	60.1	59.88	33.1133	.1249	. .
	18	λ Ursæ Minoris	3	2–4	309 59 60.7	60.5	62.3	54.4	64.5	59.3	60.28	29.2290	.2176	. .
	19	Lacaille 8385	5	III–VII.	75 44 60.4	62.9	63.0	59.0	65.9	61.4	62.10	36.7590	.7544	. .
	20	Lacaille 8403	3	IV–VI.	71 59 59.6	61.7	59.4	57.5	64.3	61.1	60.60	42.9767	.9824	. .
	21	Lacaille 8414	2	IV–VI.	“ “ “	“	“	“	“	“	“	28.7960	.7909	. .
	22	B. A. C. 7039	5	III–VII.	63 24 60.5	61.3	60.7	57.5	64.0	60.6	60.77	24.0126	.0207	30.196
	23	ε Delphini	7	II–VIII.	27 59 60.8	64.1	62.8	59.3	66.8	62.0	62.63	25.5116	.5015	. .
	24	B. A. C. 7162	5	III–VII.	61 49 58.8	60.4	59.2	56.4	62.6	59.4	59.47	33.3958	.4027	. .
	25	B. A. C. 7299, (Ref.)	3	IV–V.	221 9 57.2	56.5	58.5	53.7	61.0	58.5	57.57	32.8823	.8879	. .
	26	B. A. C. 7299	3	VI–VII.	318 49 60.9	59.6	62.3	55.7	64.0	60.5	60.50	26.6970	.6394	. .
	27	1 Pegasi, (Ref.)	3	I–III.	160 19 60.2	60.3	62.3	56.9	63.2	59.9	60.47	29.0160	.0178	. .
	28	1 Pegasi	4	VI–IX.	19 39 60.2	61.5	61.7	57.6	64.9	59.3	60.87	30.7325	.7248	. .
	29	ξ Aquarii	3	I–III.	47 19 58.8	60.2	60.8	56.8	65.0	60.1	60.28	29.4573	.4594	. .
	30	ε Pegasi	2	II, III.	29 39 58.1	59.9	59.2	56.1	63.6	57.7	59.10	34.2655	.2617	. .
	31	ε Pegasi, (Ref.)	3	VI, VII, IX.	150 19 58.0	60.2	60.5	57.5	63.7	58.5	59.73	25.3743	.3951	. .
	32	Moon S. L.	4	I, III, VII, IX	47 19 58.5	58.9	59.8	55.5	63.3	58.2	59.03	23.2065	.2206	30.217
	33	Nadir 22h. 0m.	3	. .	179 59 58.5	60.7	61.2	57.1	61.8	58.8	59.68	29.8081	.8084	
	34	Venus S. L.	5	I–IX.	41 19 60.3	64.7	63.0	62.7	66.5	62.2	63.23	33.9610	.9651	30.422
	35	Venus N. L.	4	II–VIII.	“ “ “	“	“	“	“	“	“	35.4318	.4327	. .
	36	Polaris S. P.	5	5–1	307 29 60.2	65.7	63.8	59.0	66.2	59.0	62.32	29.7546	.7481	30.400
22	37	Sun N. L.	4	I–IV.	49 39 60.5	65.9	63 5	63.2	67.0	61.8	63.65	29.9850	.9649	30.386
	38	Sun S. L.	4	VI–IX.	50 9 60.5	66.4	63.1	63.0	66.4	61.8	63.53	25.7480	.7709	. .
	39	Nadir 14h. 6m.	5	. .	179 59 60.2	63.9	63.0	61.0	63.0	59.0	61.68*d*	29.8456	.8450	. .
	40	θ Aquarii	5	III–VII.	47 19 60.0	65.1	62.5	62.9	65.0	59.1	62.43	29.9162	.9175	30.326
	41	γ Aquarii	5	III–VII.	40 59 59.0	66.0	63.1	64.9	64.7	61.8	63.25*d*	35.8508	.8468	.
	42	Nadir 22h. 24m.	5	. .	179 59 58.2	64.7	64.0	62.9	61.6	56.7	61.35	29.8456	.8410	. .
	43	Moon S. L.	5	III–VII.	42 9 61.0	68.0	64.2	65.0	66.0	60.6	64.13	27.0028	.0071	. .
	44	Anon. 22h. 53m. 7s.	5	III–VII.	62 4 60.0	65.6	63.1	63.8	64.0	59.4	62.65	25.9710	.9777	. .
	45	Lacaille 9338	5	IV–VI.	“ “ “	“	“	“	“	“	“	38.3743	.3812	. .
	46	B. A. C. 8047	5	III–VII.	63 24 60.2	65.7	62.3	63.8	63.6	58.8	62.40	38.9712	.9782	. .
	47	γ Piscium	5	III–VII.	36 19 60.7	67.0	64.3	65.0	65.4	59.1	63.58	29.2478	.2597	. .
	48	κ Piscium	5	III–VII.	38 24 61.0	68.3	67.0	66.4	67.4	62.3	65.40	35.8352	.8298	30.324
	49	Venus S. L.	5	III–VII.	41 9 57.3	62.2	60.6	60.1	63.1	59.6	60.48	32.8886	.8873	30.221
23	50	Sun S. L.	4	I–IV.	50 34 57.9	61.8	60.2	59.2	62.5	58.3	59.98	33.0495	.0327	. .
	51	Sun N. L.	4	VI–IX.	49 59 57.0	61.4	59.4	58.6	62.5	57.5	59.40	27.6112	.6317	30.163
	52	Nadir 14h. 10m.	4	. .	179 50 59.7	62.6	62.6	60.5	62.0	59.3	61.12*d*	29.8320	.8319	
25	53	Venus S. L.	5	I–IX.	40 44 58.6	64.6	61.9	64.1	61.8	60.0	61.83	27.8432	.8393	. .
	54	Venus N. L.	4	II–VIII.	“ “ “	“	“	“	“	“	“	29.2582	.2710	30.480
	55	Mercury, centre	5	I–IX.	42 39 59.1	66.3	64.1	64.8	64.3	58.4	62.83	30.2436	.2576	30.470
26	56	Nadir 14h. 23m.	3	. .	179 59 59.0	65.8	65.2	64.5	63.8	57.3	62.60	29.8805	.8799	
	57	B. A. C 6829	5	III–VII.	69 44 58.3	65.9	64.4	66.4	64.5	59.5	63.17	26.9566	.9638	. .
	58	B. A. C. 6841	5	III–VII.	“ “ “	“	“	“	“	“	“	30.0806	.0941	30.379
	59	λ Ursæ Minoris	3	V–5.	309 59 60.0	66.2	65.1	61.9	64.9	56.5	62.43	29.2097	.2182	. .
	60	Nadir 20h. 20m.	3	. .	179 59 58.8	66.5	65.4	65.7	63.3	56.9	62.77	29.8952	.8946	. .
	61	Lacaille 8497	5	III–VII.	80 29 59.3	68.0	65.4	66.5	65.8	59.0	64.00	30.5992	.5927	. .

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	29.7818	+ 13.11	+ 2 28.99	68 47 46.80	— 29 54 7.55	— 78.15	Ha.	
. .	. .	. . . .	— 1 21.87	1 27.92	56 30 8.75	17 36 29.50	82.45		9th magnitude.
. .	. .	. . . .	— 8 36.69	1 44.03	60 48 9.82	21 54 30.57	82.14		6th magnitude.
58.0	50.0	. . . .	+ 46.42	1 44.71	60 57 33.61	22 3 54.36	82.65		
. .	. .	29.7744	— 1 35.96	34.25	41 29 1.94	2 34 58.08		N.	Good.
59.7	58.6	. . . .	2 24.13	34.24	41 28 13.76				
. .	. .	. . . .	1 11.17	44.48	42 4 34.74	3 10 50.68			
60.8	64.0	. . . .	— 1 20.24	+ 44.48	42 4 25.67				
. .	67.1	. . . .	+ 0.57	— 1 13.59	307 28 47.36	88 35 8.11	81.05		
63.0	69.8	. . . .	— 1 18.91	+ 17 5.89	49 35 50.30	10 42 11.05			Good.
72.0	65.0	29.8146	— 2 53.03	59.19	46 13 5.63	— 7 19 26.38	39.93		
. .	. .	. . . .	+ 48.24	31.00	28 36 20.21	+ 10 17 19.04	48.95		
. .	. .	. . . .	+ 12.34	2 11.08	66 42 22.84	— 27 48 43.59	36.88		
. .	64.6	. . . .	— 3 17.51	2 33.17	69 49 14.93	30 55 35.68	37.47		
. .	. .	. . . .	+ 1 43.79	+ 1 46.78	62 3 30.45	— 23 9 51.20	41.77		
. .	. .	. . . .	+ 18.72	— 1 7.78	309 59 11.22	+ 88 54 28.03	64.56		
. .	. .	. . . .	— 3 37.59	+ 3 39.62	75 45 4.13	— 36 51 24.88	41.22		Mic. reading 1 rev. greater than on Oct. 9.
. .	. .	. . . .	— 6 52.85	2 52.53	71 56 0.28	33 2 21.03	43.67		
. .	. .	. . . .	+ 32.09	2 53.80	72 3 26.49	33 9 47.24	43.98		
65.1	63.5	. . . .	3 1.65	1 53.88	63 29 56.30	— 24 36 17.05	49.18		
. .	. .	. . . .	+ 2 15.23	30.43	28 2 48.29	+ 10 50 50.96	63.03		
. .	62.7	. . . .	— 1 52.49	1 46.20	61 49 53.18	— 22 56 13.93	54.02		
. .	. .	. . . .	— 1 36.36	+ 0 49.97	221 9 11.18	+ 80 2 50.43	79.06		Good observation.
. .	. .	. . . .	+ 1 39.55	— 49.97	318 50 50.08	80 2 49.17	79.06		Good observation.
. .	. .	. . . .	24.98	— 20.49	160 20 4.96	19 13 44.21	77.34		
. .	61.2	. . . .	28.54	+ 20.49	19 39 52.82	+ 19 13 46.43	77.34		
. .	. .	. . . .	+ 11.13	1 2.23	47 21 13.64	— 8 27 34.39	72.22		
. .	. .	. . . .	— 2 19.43	+ 32.68	29 38 12.35	+ 9 15 26.90	78.98		
. .	. .	. . . .	+ 2 18.56	— 32.68	150 21 45.61	+ 9 15 24.86	78.98		
64.2	59.9	. . . .	+ 3 26.75	— 58 32.16	46 24 53.61	— 7 31 14.36			
62.0	54.0	29.7914	— 2 10.85	+ 34.95	41 18 27.33	— 2 24 24.53		Ha.	
. .	. .	. . . .	— 2 56.80	+ 33.80	41 17 40.23				
60.0	56.8	. . . .	+ 1.36	— 1 15.76	307 28 47.92	+ 88 35 8.67	80.97		
60.0	57.5	. . . .	— 5.44	+ 1 1.82	49 41 0.03	— 11 3 27.10			
. .	. .	. . . .	+ 2 6.06	1 3.08	50 13 12.67				
56.0	48.8	29.7980	— 3.75	1 3.97	47 21 2.65	8 27 23.40	79.22		
. .	48.4	. . . .	— 3 9.65	+ 51.23	40 57 44.83	2 4 5.58	81.84		
. .	. .	. . . .	+ 1 27.50	— 54 42.22	41 16 49.41	2 23 10.16			
. .	. .	. . . .	+ 1 59.78	+ 1 51.47	62 8 53.90	23 15 14.65	80.59		9th magnitude.
. .	. .	. . . .	— 4 29.11	1 50.97	62 2 24.51	23 8 45.26	80.74		
. .	. .	. . . .	— 4 47.83	1 57.43	63 22 12.00	— 24 28 32.75	80.90		
. .	. .	. . . .	+ 16.88	43.58	36 21 4.04	+ 2 32 35.21	88.59		Very bad night. Stars blurred and unsteady.
55.0	46.5	29.7980	— 3 9.12	46.91	38 22 43.19	+ 0 30 56.06	88.62		
59.8	58.9	29.7962	1 36.92	9.42	41 8 32.98	— 2 14 53.73		N.	Good.
. .	. .	. . . .	— 1 41.47	1 3.17	50 34 21.68	11 24 35.89			
60.9	63.4	. . . .	+ 1 7.87	1 1.32	50 2 8.59				Good observation.
. .	. .	29.8093	1 1.76	0 36.62	40 46 40.21	1 52 37.86			The cusp can now be observed satisfactorily.
52.7	42.6	. . . .	+ 16.88	0 36.60	40 45 55.31	1 52 37.86			
50.9	44.8	. . . .	— 14.06	49.08	42 40 37.85	3 46 58.60			
. .	. .	. . . .	+ 1 29.22	2 40.74	69 49 13.13	30 55 33.88	37.31		
49.8	44.0	. . . .	— 8.93	+ 2 40.53	69 47 34.77	30 53 55.52	37.97		
. .	43.7	. . . .	+ 18.53	— 1 11.10	309 59 9.86	88 54 29.39	64.74		
. .	. .	. . . .	— 24.57	+ 5 44.31	80 35 23.74	— 41 41 44.49	— 45.36		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
37–38	Sun	16′ 6.″32
50–51		16 6.54
5–6	Venus	24.61
34–35		23.55
53–54		23.10
7–8	Mercury	4.81

[illegible]	[illegible]	[illegible]	No. of mic. readings.	Transit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
					' "			'		"	"	r.	r.	in.
[illegible]		[illegible]	5	III-VII.	73 59 60.5	67.0	65.3	69.0	65.6	58.4	64.47	29.2808	.2978	30.38
		[illegible]	5	III-VII.	66 39 57.7	64.4	63.9	64.8	63.3	57.5	61.93	33.4685	.4690	- -
		[illegible]	3	III-VII.	63 14 56.0	62.9	60.5	61.5	60.5	54.1	59.25	28.0180	.0283	- -
		[illegible]	5	III-VII.	66 44 58.8	65.2	64.9	66.4	63.7	57.6	62.77	27.6996	.6904	- -
		[illegible]	3	III-VII.	62 44 57.6	66.4	62.4	64.6	61.7	55.5	61.03	28.4170	.4239	30.37
		[illegible]	5	III-VII.	66 34 58.1	64.5	64.5	65.1	63.2	56.3	61.95	32.4786	.4789	- -
	[illegible]	[illegible]	3	III-VII.	54 39 59.7	65.4	64.8	67.2	65.0	56.7	63.30	32.9447	.9487	- -
	[illegible]	[illegible]	1	V.	61 24 61.4	69.5	68.1	68.9	67.4	60.4	65.95	36.1290	.1399	30.37
	[illegible]	[illegible]	3	III-VII.	70 9 57.7	66.5	65.0	67.7	64.3	57.3	63.08	32.7563	.7517	- -
		[illegible]	3	III-VII.	64 59 57.8	64.0	63.6	65.0	62.3	54.8	61.25	26.9107	.9153	- -
	[illegible]	[illegible]	3	III-VII.	38 39 56.9	65.6	65.1	66.9	63.2	56.0	62.28	27.2390	.2513	30.37
		[illegible]	5	1-5.	310 24 58.5	67.4	66.5	65.1	63.2	54.3	62.50	40.0838	.0891	30.36
	[illegible]	[illegible]	2	II & IV.	155 44 59.9	68.8	67.0	69.5	65.2	56.0	64.40	28.8335	.8120	- -
	[illegible]	[illegible] (Ref.)	3	VII-IX.	24 14 59.4	68.6	67.5	69.5	64.5	56.0	64.25	31.0153	.0278	- -
	[illegible]	[illegible]	2	I, II.	31 4 57.8	67.5	66.5	68.8	63.7	55.4	63.28	30.0805	.0691	- -
	[illegible]	[illegible]	2	V, VII.	145 54 58.8	68.9	67.1	68.4	64.6	56.7	64.08	29.8185	.8183	- -
	[illegible]	[illegible] (Ref.)	7	I-IX.	36 44 57.5	67.0	66.2	67.8	64.6	53.7	62.80	27.1599	.1709	- -
	[illegible]	Nadir 2h. 5m.	3	- -	179 59 58.0	67.9	66.6	69.2	62.1	54.9	63.12*d*	29.9238	.9231	
	[illegible]	Moon N. L.	4	I-IV.	22 49 58.1	67.6	65.3	67.5	63.9	55.9	63.05	27.3690	.5125	- -
	20	Moon S. L.	4	VI-IX.	23 24 57.6	68.2	65.4	68.0	63.7	54.8	62.95	33.9365	.7852	30.35
	21	Venus S. L.	5	I-IX.	40 39 60.9	69.2	64.5	68.2	65.9	59.0	64.62	28.7042	.6920	30.36
	22	Venus N. L.	4	II-VIII.	" " "	"	"	"	"	"	"	30.1638	.1763	- -
[illegible]	23	Nadir 15h. 40m.	3	-	179 59 59.6	64.8	63.7	62.0	63.3	55.9	61.55*d*	29.8550	.8544	- -
	24	γ Arietis	5	III-VII.	18 4 59.5	68.9	65.8	68.2	65.0	55.0	63.90	28.8522	.8451	30.29
	25	δ Arietis	5	III-VII.	19 39 59.0	67.8	65.0	67.9	63.5	54.8	63.17	28.7658	.7534	- -
	26	Moon N. L.	7	II-VIII.	20 4 59.8	68.9	65.5	68.5	65.1	55.2	64.00	35.2367	.2433	30.29
	27	23 Tauri	3	IV-VI.	15 14 60.0	68.9	66.5	68.0	64.0	54.9	63.72	16.3780	.3820	- -
	[illegible]	Nadir 3h. 48m.	5	- -	179 59 59.4	70.5	67.9	69.8	65.0	55.5	64.68*d*	29.9765	.9800	- -
	[illegible]	A Tauri	5	III-VII.	17 9 58.4	68.3	66.6	68.0	64.0	53.9	62.20	28.2596	.2688	30.290
	[illegible]	Venus S. L.	3	I, V, IX.	40 34 58.1	65.5	63.5	65.0	64.1	57.8	62.33	27.3730	.3797	- -
	[illegible]	Venus N. C.	2	III, VII.	" " "	"	"	"	"	"	"	28.8215	.8157	30.376
	[illegible]	Mercury S. L.	3	I, V, IX.	43 24 58.6	66.1	63.2	64.2	65.1	56.6	62.30	32.6137	.7488	- -
	[illegible]	Mercury N. C.	2	III, VII.	" " "	"	"	"	"	"	"	33.1290	.9953	- -
	[illegible]	Polaris S. P.	3	2-1.	307 29 60.0	66.0	64.1	61.7	65.1	57.1	62.33	29.6837	.6749	30.373
[illegible]	[illegible]	Sun N. L.	4	I-IV.	51 44 59.4	67.3	63.6	66.2	66.9	59.6	63.83	31.8410	.8131	- -
	[illegible]	Sun S. L.	4	VI-IX.	52 14 55.1	63.5	60.7	62.1	63.8	56.4	60.27	27.3018	.3463	30.367
	[illegible]	Nadir 14h. 25m.	3	- -	179 59 57.2	63.8	61.9	61.8	62.1	54.5	60.22	29.8184	.8188	- -
	[illegible]	Ursæ Minoris	5	- -	316 39 57.2	60.3	60.0	56.4	62.7	54.5	58.52	31.7890	.7798	- -
	[illegible]	Nadir 20h. 40m.	3	- -	179 59 56.9	63.7	62.6	60.8	63.0	54.7	60.28	29.8282	.8282	
	[illegible]	Lacaille [illegible]	3	IV-VI.	73 59 57.1	64.4	63.2	63.8	65.0	55.9	61.57	29.1050	.1171	30.357
	[illegible]	Hev., Dra's, S. P. (Ref.)	2	III½, IV.	239 9 58.0	62.5	62.2	61.6	65.4	58.7	61.40	30.4210	.3857	- -
	[illegible]	Hev., Draconis, S. P.	3	V-VI.	300 49 56.2	62.0	60.1	58.0	63.0	54.5	58.97	29.1773	.1990	- -
	[illegible]	Lacaille [illegible]	4	III-IX.	66 44 58.5	65.0	63.0	64.4	66.3	59.4	62.77	27.6358	.6375	- -
	[illegible]	Capricorni	3	I-III.	53 4 59.0	65.2	63.2	63.0	66.5	57.4	62.38	32.5643	.5458	- -
	[illegible]	Aquarii	9	I-IX.	39 49 57.5	64.6	62.7	62.1	66.9	57.7	61.92	27.2219	.2346	- -
	[illegible]	B. A. C. 3495, S. P.	3	- -	303 49 59.6	65.0	64.5	61.7	67.0	56.9	62.45	27.6570	.6523	- -
	[illegible]	Hev., Draconis, S. P.	7	III½-VI½.	295 19 60.5	65.5	63.6	62.6	68.1	57.6	62.98	29.5819	.5862	30.368
	[illegible]	Pegasi	9	I-IX.	28 44 58.6	64.9	63.6	64.7	66.5	57.0	62.55	28.8927	.8876	- -
	[illegible]	Ursæ Majoris, S. P.	5	VII-III.	281 29 56.7	62.9	60.6	59.9	62.7	53.3	59.35	34.9510	.9677	30.370
	[illegible]	Polaris	2	1, 2.	310 19 56.5	60.8	62.3	58.0	59.9	50.9	58.07	30.3575	.3596	- -
	[illegible]	Lacaille 427	5	III-VII.	65 49 59.0	68.6	66.7	67.6	67.2	58.2	64.55	37.5878	.5972	30.359
	52	Lacaille 456	5	III-VII.	63 14 58.0	67.1	64.3	65.3	65.3	56.4	62.73	29.0574	.0689	- -
	[illegible]	Eridani	3	I-III.	48 44 58.2	66.6	64.6	67.1	65.8	56.5	63.13	34.8730	.8755	- -
	54	Eridani (Ref.)	3	VII-IX.	131 9 57.2	64.5	62.0	62.9	61.1	52.6	60.50	25.2557	.2627	30.363
	[illegible]	B. A. C. 1211	2	III½-IV½.	318 34 56.6	62.9	64.0	60.5	61.1	52.5	59.60	28.4843	.4521	- -
	[illegible]	Nadir 4h. 5m.	4	- -	179 59 57.4	66.2	65.0	65.5	62.6	53.8	61.75	29.8558	.8554	
	[illegible]	Moon N. L.	5	I-IX.	18 19 57.0	65.8	65.3	64.9	64.4	53.3	61.78	28.7960	.7788	30.370
	[illegible]	[illegible] L.	5	I-IX.	40 34 60.6	71.6	67.0	68.8	68.2	61.8	66.33	33.9800	.9847	30.448
	[illegible]	[illegible] N. L.	4	II-VIII.	" " "	"	"	"	"	"	"	35.3285	.3380	- -
	[illegible]	[illegible] P.	5	V.	307 29 60.6	68.1	65.0	62.2	67.0	57.8	63.45	29.6560	.6421	30.454
[illegible]		[illegible]	4	I-IV.	52 4 60.7	59.1	66.5	67.0	69.3	61.3	63.98	31.8682	.8428	30.436
	[illegible]	[illegible]	4	VI-IX.	52 34 60.5	68.3	66.0	66.2	69.8	61.0	65.30	27.4590	.4905	- -

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
47.5	41.7	29.8093	+ 16.04	+ 3 26.57	74 3 47.08	— 39 10 7.83	— 55.24	N.	
. .	41.2	. . . .	— 1 54.74	2 18.24	66 40 25.43	27 46 46.18	61.13		
. .	. .	. . . .	+ 55.84	1 58.77	63 17 53.86	24 24 14.61	63.73		
. .	40.9	. . . .	1 6.44	2 19.22	66 48 28.43	27 54 49.18	65.41		7th magnitnde.
46.0	40.5	. . . .	+ 43.46	1 56.38	62 47 40.87	23 54 1.62	69.31		Magnitude 6.3.
. .	. .	. . . .	— 1 23.67	2 18.02	66 35 56.30	27 42 17.05	70.26		Magnitude 7.3.
. .	39.9	. . . .	1 38.43	1 24.70	54 39 49.57	15 46 10.32	76.22		Magnitude 6.0.
44.7	39.3	. . . .	3 18.49	1 49.98	61 23 37.44	22 29 58.19	77.53		
. .	38.5	. . . .	— 1 32.26	2 45.84	70 11 16.66	31 17 37.41	79.52		Magnitude 6.7.
. .	. .	. . . .	+ 1 30.74	2 9.10	65 3 41.09	— 26 10 1.84	81.64		Magnitude 7.2.
42.4	38.1	. . . .	+ 1 20.20	+ 48.27	38 42 10.75	+ 0 11 28.50			
42.0	37.4	. . . .	— 5 22.30	— 1 11.20	310 18 29.00	88 35 10.25	82.95		
. .	. .	. . . .	+ 31.27	— 27.27	155 45 8.40	14 38 47.65	82.69		
. .	. .	. . . .	— 38.20	+ 27.27	24 14 53.32	14 38 45.93	82.69		
. .	. .	. . . .	— 8.15	+ 40.98	34 5 36.11	4 48 3.14	80.44		
. .	. .	. . . .	+ 0.28	— 40.98	145 54 23.38	4 48 2.63	80.44		
. .	36.7	. . . .	1 22.72	+ 45.28	36 47 10.80	2 6 28.45	76.58		Wires II, VIII, omitted.
. .	. .	. . . .	+ 1 12.01	— 21 36.44	22 29 38.62	+ 16 8 23.14			
42.0	36.5	. . . .	— 2 4.69	— 22 4.66	23 0 53.60				Correction for defective illumination + 0″.29.
44.0	41.0	29.8051	+ 34.90	+ 36.59	40 41 16.11	— 1 47 12.85		Ha.	Exceedingly tremulous.
. .	. .	. . . .	— 11.65	35.12	40 40 28.09				
42.0	34.9	29.8307	+ 30.90	19.83	18 5 54.63	+ 20 47 44.62	62.55		Not worth while to observe stars so unsteady.
. .	. .	. . . .	+ 33.77	+ 21.70	19 40 58.64	19 12 40.61	59.04		
42.0	35.1	. . . .	— 2 49.71	— 3 23.25	19 58 51.04	18 54 48.21			
. .	. .	. . . .	+ 7 1.65	+ 16.68	15 22 22.05	23 31 17.20	47.62		
41.5	34.9	. . . .	48.97	18.77	17 11 10.94	+ 21 42 28.31	41.65		
. .	. .	29.8102	1 16.21	36.75	40 36 55.29	— 1 42 52.81		N.	
46.2	41.9	. . . .	+ 1 31.18	36.73	40 36 10.24				
. .	45.2	. . . .	— 1 32.14	50.55	43 24 20.71	4 30 37.38			
. .	. .	. . . .	— 1 39.86	+ 50.55	43 24 12.99				Limb with one wire; cusp with the other.
48.0	45.4	. . . .	+ 4.25	— 1 17.46	307 28 49.12	88 35 9.87	— 83.46		
. .	. .	. . . .	— 1 2.80	+ 1 8.26	51 45 9.29	13 7 39.00			
48.8	47.6	. . . .	+ 1 17.27	+ 1 9.67	52 17 27.21				
. .	50.4	. . . .	— 1 1.75	— 55.61	316 38 1.16	82 15 38.09	+ 4.21		Readings within 1 minute before and after transit.
48.9	41.8	. . . .	+ 21.73	+ 3 26.33	74 3 49.63	35 10 10.38	— 55.18		Magnitude 7.8.
. .	. .	. . . .	— 18.04	+ 1 40.24	59 11 23.60	81 54 57.15	+ 82.91		
. .	41.1	. . . .	+ 19.17	— 1 40.26	300 48 37.88	81 54 58.63	+ 82.91		
. .	40.7	. . . .	+ 1 8.15	+ 2 19.17	66 48 30.09	27 54 50.84	— 65.30		
. .	. .	. . . .	— 1 25.78	1 19.83	53 4 56.43	14 11 17.18	72.93		
. .	. .	. . . .	+ 1 20.76	+ 50.21	39 52 12.89	— 0 58 33.64	— 79.52		
. .	. .	. . . .	1 7.66	— 1 29.55	303 49 40.56	+ 84 56 1.31	+ 91.78		Hour angles 1m. 30s., 1m. 3s., and 0s.
47.1	39.5	. . . .	7.03	— 2 6.64	295 18 3.37	76 24 24.12	+ 91.75		
. .	39.2	. . . .	+ 28.92	+ 33.09	28 46 4.56	10 7 34.69	— 87.57		
46.0	38.7	. . . .	— 2 41.70	— 4 50.17	281 22 27.48	62 28 48.23	+ 90.85		
. .	. .	. . . .	17.22	— 1 11.50	310 18 29.35	+ 88 35 9.90	— 83.67		
40.8	35.0	. . . .	— 4 4.15	+ 2 14.41	65 48 14.81	— 26 54 35.56	78.39		
. .	. .	. . . .	+ 23.24	2 0.20	63 17 26.17	24 23 46.92	78.21		
. .	. .	. . . .	2 34.72	+ 1 9.43	48 48 47.28	9 55 8.03	54.72		
41.5	34.6	. . . .	2 22.56	— 1 9.43	131 11 13.63	— 9 55 7.12	54.72		
. .	. .	. . . .	42.57	53.65	318 34 48.52	80 18 50.73	35.91		
									Image very unsteady.
45.0	34.2	. . . .	+ 32.33	— 1 50.97	18 18 43.14	+ 20 34 56.11			
43.0	42.7	29.8121	— 2 10.82	+ 36.83	40 33 32.34	— 1 39 31.15		Ha.	
. .	. .	. . . .	— 2 53.26	+ 35.39	40 32 48.46				
46.5	48.4	. . . .	+ 5.32	— 1 17.24	307 28 51.53	+ 88 35 12.28	83.92		All at wire V.
49.0	51.0	. . . .	— 1 3.67	+ 1 8.81	52 5 9.12	— 13 27 39.47			
. .	. .	. . . .	+ 1 12.79	+ 1 10.24	52 37 28.33				

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
35–36	Sun●.	16 8.96
61–62		16 9.60
21–22	Venus	24.01
30–31		23.23
58–59		21.94
19–20	Moon	15 37.49
32–33	Mercury	4.08

DATE.	Number.	OBJECT.	No. of mic. readings.	Trait wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Correc'd.	Barometer.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Oct. 29	1	Nadir 15h. 25m.	3	- -	179 59 60.4	66.6	64.3	63.0	65.5	59.0	63.13*d*	21.9128	.9119	- -
	2	Lacaille 9568	9	I-IX.	68 39 56.5	65.4	61.7	63.0	66.0	58.2	61.80	31.8377	.8449	30.346
	3	Lacaille 9611	9	I-IX.	69 4 56.1	65.9	62.1	62.8	65.7	58.0	61.77	38.3161	.3385	- -
	4	Lacaille 9636	9	I-IX.	“ “ “	“	“	“	“	“	“	38.9483	.9629	- -
	5	Anon. 23h. 49m. 31s.	5	III-VII.	“ “ “	“	“	“	“	“	“	26.0314	.0424	- -
	6	ζ Sculptoris	9	I-IX.	69 19 56.1	65.0	62.1	61.8	66.0	57.8	61.47	30.4417	.4535	30.352
	7	Nadir 0h. 47m.	3	- -	179 59 55.8	62.5	61.1	59.7	61.1	54.0	59.03*d*	29.7970	.7894	
	8	e Piscium	5	III-VII.	33 59 55.1	64.0	60.7	60.2	64.1	55.2	59.88	35.4282	.4281	30.322
	9	Polaris	5	V.	310 19 55.0	62.9	60.5	55.9	63.0	52.0	58.22	30.4504	.4488	- -
	10	θ¹ Ceti	5	III-VII.	47 44 55.0	61.2	58.1	59.0	63.0	54.5	58.47	28.6470	.6343	- -
	11	π Piscium	5	III-VII.	27 29 55.5	65.4	61.3	62.0	64.4	56.0	60.77	36.9576	.9588	30.316
30	12	Nadir 20h. 35m.	3	- -	179 59 58.4	61.1	62.7	57.1	64.1	57.9	60.22	29.8275	.8277	
	13	ζ Cygni	3	III-VII.	9 14 57.9	63.7	61.3	57.7	66.0	56.3	60.48	33.8627	.8537	- -
	14	β Cephei	4	I-IV.	328 54 58.7	62.5	63.3	55.7	65.0	57.4	60.43	28.0640	.9937	- -
	15	β Cephei, (Ref.)	5	V-IX.	211 4 61.6	64.0	63.7	60.0	66.8	63.5	63.27	31.7432	.7950	- -
	16	α Aquarii	3	I-III.	39 49 59.1	63.0	61.5	58.6	68.5	61.0	61.95	27.1800	.1779	- -
	17	α Aquarii, (Ref.)	3	VI, VIII, IX	140 9 57.4	62.1	58.5	57.2	64.6	57.8	59.65	32.5460	.5485	30.087
	18	γ Aquarii, (Ref.)	3	I, II, IV.	139 4 57.6	62.2	59.5	56.5	65.6	57.9	59.88	33.5450	.5206	- -
	19	γ Aquarii	3	VII-IX.	40 54 64.3	68.9	67.5	64.3	73.2	67.4	67.68	26.3760	.3973	- -
	20	η Aquarii	1	IX.	39 39 59.1	64.0	61.8	59.2	69.3	62.3	62.62	26.5890	.5958	- -
	21	ζ Pegasi	1	V.	28 44 58.4	62.8	62.5	58.6	68.5	58.7	61.58	28.8360	.8307	- -
	22	α Piscis Australis	5	I-IX.	69 9 59.6	65.3	64.9	62.0	69.5	62.6	63.98	26.7680	.7743	30.081
	23	γ Piscium	3	I-III.	36 19 59.0	63.2	62.0	57.6	67.0	58.2	61.17	29.1503	.1456	- -
	24	γ Piscium, (Ref.)	4	VI-IX.	143 39 59.3	63.3	61.9	59.2	67.8	61.1	62.10	30.5982	.5992	- -
	25	θ Piscium, (Ref.)	5	III-VII.	146 44 58.4	60.9	59.6	56.3	65.9	59.6	60.12	29.6228	.6100	- -
	26	ι Piscium, (Ref.)	4	I-IV.	145 59 57.1	61.6	59.0	56.4	65.3	58.7	59.68	28.7935	.7749	- -
	27	ι Piscium	2	VIII, IX.	33 59 58.9	63.5	62.8	58.6	67.8	60.4	62.00	30.9290	.9428	- -
	28	B. A. C. 8314, (Ref.)	2	VII, IX.	214 44 58.6	60.9	60.5	55.5	66.0	58.7	60.03	30.2650	.3920	- -
	29	Nadir	4	- -	179 59 59.5	63.8	63.0	58.7	66.4	59.6	61.83*d*	29.8765	.8757	
31	30	Lacaille 9256	5	III-VII	65 29 57.0	63.0	61.5	59.2	65.1	57.8	60.60	31.9494	.9554	30.236
	31	Lacaille 9301	3	III-V.	71 9 57.0	63.2	60.8	59.6	64.2	59.0	60.63	25.6843	.6695	- -
	32	Lacaille 9307	3	V-VII.	“ “ “	“	“	“	“	“	“	33.9790	.9923	- -
	33	Lacaille 9357	5	III-VII.	66 29 57.4	59.9	60.0	62.8	65.4	63.0	61.42	41.1350	.1501	- -
	34	Lacaille 9379	5	III-VII.	65 24 57.0	62.4	61.5	60.0	64.5	57.7	60.52	29.1174	.1317	30.242
	35	Nadir	5	- -	179 59 56.5	64.0	62.2	59.9	63.0	56.0	60.27*d*	29.8461	.8415	
	36	Lacaille 9568	5	III-VII.	68 39 56.6	64.0	61.4	60.5	64.1	58.4	60.83	31.8312	.8300	30.254
	37	Lacaille 9611	5	III-VII.	68 59 56.0	62.7	62.1	60.9	63.6	58.8	60.68	28.7766	.7718	- -
	38	Lacaille 9636	5	III-VII.	“ “ “	“	“	“	“	“	“	29.3524	.3642	- -
	39	Anon. 23h. 49m. 29s.	5	III-VII.	“ “ “	“	“	“	“	“	“	16.4398	.4436	- -
	40	ζ Sculptoris	5	III-VII.	69 19 56.0	63.1	61.4	59.8	63.9	57.9	60.35	30.3934	.4018	30.256
Nov. 1	41	Venus S. L.	4	I, III, VII, IX.	40 29 58.4	65.2	61.6	62.5	64.7	60.2	62.10	31.7090	.6971	- -
	42	Venus N. C.	5	II-VIII.	“ “ “	“	“	“	“	“	“	33.0338	.0413	30.440
	43	Polaris S. P.	2	2-1	307 29 59.7	66.3	64.0	60.9	66.3	58.3	62.58	29.6060	.5976	30.428
2	44	Sun S. L.	4	I-IV.	53 54 57.2	64.8	61.8	61.6	64.9	57.6	61.32	31.4462	.4235	- -
	45	Sun N. L.	4	VI-IX.	53 19 57.3	63.7	60.6	60.9	64.0	57.2	60.62	26.1345	.1793	30.389
	46	Nadir 14h. 50m.	3	- -	179 59 55.0	61.9	60.6	58.7	60.7	54.0	58.48	29.7738	.7757	
	47	Nadir 20h. 15m.	4	- -	179 59 58.1	63.2	63.2	60.1	63.5	57.5	60.93*d*	29.8589	.8585	
	48	Lacaille 8497	5	III-VII.	80 29 59.2	66.2	64.0	61.8	68.2	59.9	63.22	30.3580	.3716	30.310
	49	α Cygni, (Ref.)	5	III-VII.	185 54 59.6	63.2	62.7	61.3	64.9	58.6	61.72	31.1086	.1111	- -
	50	76 Draconis	4	- -	316 54 55.6	58.2	59.0	54.3	61.0	53.3	56.90	34.2600	.2234	- -
	51	76 Draconis, (Ref.)	4	- -	223 4 57.5	60.7	60.9	58.6	60.9	58.3	59.48	25.2438	.3280	30.306
	52	1 (Hev.) Dra's S.P., (Ref.)	5	III-V.	239 9 59.0	62.6	62.4	60.0	66.7	60.6	61.88	30.4208	.3873	- -
	53	1 (Hev.) Draconis S. P.	3	VI-VII.	300 49 57.3	61.6	60.9	57.5	63.6	55.9	59.47	29.2507	.3192	- -
	54	ε Pegasi, (Ref.)	2	I, III.	150 19 57.2	61.5	63.0	59.9	64.3	55.6	60.25	25.3745	.3886	- -
	55	ε Pegasi	2	VII, IX.	29 39 55.5	61.2	59.9	58.9	64.0	55.5	69.17	34.2275	.2384	- -
	56	79 Draconis	3	IV-VI.	325 49 58.6	61.6	63.0	57.5	65.1	56.5	60.38	29.1270	.1281	- -
	57	Lacaille 9003	1	V.	66 54 58.1	63.6	64.0	61.9	65.9	59.5	62.17	34.6360	.6222	30.305
	58	B. A. C. 3495 S. P., (Ref.)	3	5, V, 1.	236 9 57.0	62.2	63.2	59.0	64.3	59.4	60.85	31.9900	.9931	- -
	59	B. A. C. 3495 S. P.	5	IV-III.	303 49 57.0	60.5	61.1	57.3	64.0	54.5	59.07	27.5548	.6346	- -
	60	B. A. C. 7960	5	III-VII.	69 4 57.7	64.1	64.1	62.8	65.8	58.7	62.20	27.1568	.1727	- -
	61	α Piscis Australis	3	III-VII.	69 9 57.8	63.9	64.2	62.2	65.5	59.0	62.10	26.8450	.8459	- -

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	″	° ′ ″	° ′ ″	″		
49.0	44.0	29.8204	— 1 3.48	+ 2 31.51	68 41 29.83	— 29 47 50.88	— 81.14	Ha.	
. .	. .	. . . .	4 27.06	2 34.41	69 3 9.12	30 9 29.87	81.34		
. .	. .	. . . .	— 4 46.65	2 34.41	69 2 49.53	30 9 10.28	81.46		
. .	. .	. . . .	+ 1 58.45	2 35.34	69 9 35.56	30 15 56.31	81.52		8th magnitude.
48.5	43.5	. . . .	— 19.84	2 37.07	69 22 18.70	— 30 28 39.45	81.60		
48.0	41.2	. . . .	2 55.82	+ 40.35	33 57 44.41	+ 4 55 54.84	85.18		
. .	. .	. . . .	— 19.70	— 1 10.54	310 18 27.98	+ 88 35 11.27	84.10		All at wire V.
. .	. .	. . . .	+ 37.19	+ 1 5.98	47 46 41.64	— 8 53 2.39	81.50		
47.5	40.8	. . . .	— 3 43.80	31.15	27 26 48.12	+ 11 26 51.13	81.65		
. .	. .	29.8190	— 2 6.50	+ 9.37	9 13 3.35	29 40 35.90	78.29	N.	
. .	. .	. . . .	+ 57.23	— 34.79	328 55 22.87	69 58 16.38	87.62		
. .	. .	. . . .	— 1 1.95	+ 34.79	211 4 36.11	+ 69 58 15.36	87.62		
. .	. .	. . . .	+ 1 22.81	+ 48.21	39 52 12.97	— 0 58 33.72	79.53		
54.8	55.7	. . . .	— 1 25.58	— 48.21	140 7 45.86	0 58 34.89	79.53		
. .	. .	. . . .	— 1 56.06	— 50.13	139 2 13.69	2 4 7.06	81.66		
. .	55.4	. . . .	+ 1 47.28	+ 50.13	40 57 45.08	2 4 5.84	81.66		
. .	. .	. . . .	1 41.06	47.97	39 42 31.65	— 0 48 52.40	83.81		Good observation.
. .	55.3	. . . .	30.99	31.73	28 46 4.30	+ 10 7 34.95	87.66		Good observation.
55.1	55.8	. . . .	1 35.46	2 30.80	69 14 10.24	— 30 20 30.99	77.23		Wire VIII instead of wire VII.
. .	. .	. . . .	+ 21.12	+ 42.46	36 21 4.75	+ 2 32 34.50	88.45		
. .	55.9	. . . .	— 24.46	— 42.46	143 38 55.18	2 32 34.43	88.45		
. .	. .	. . . .	+ 6.55	37.86	146 44 28.81	5 38 8.06	89.72		
. .	. .	. . . .	+ 32.73	— 38.96	145 59 53.45	4 53 32.70	89.86		
. .	55.3	. . . .	— 35.23	+ 38.96	34 0 5.73	+ 4 53 33.52	89.86		
. .	. .	. . . .	17.96	40.12	214 45 22.19	73 39 1.44	96.74		
53.0	47.1	29.8329	— 1 6.55	2 8.80	65 31 2.85	— 26 37 23.60	77.16	Ha.	
. .	. .	. . . .	+ 2 10.52	2 52.08	71 15 3.23	32 21 23.98	76.22		
. .	. .	. . . .	— 2 10.40	2 51.38	71 10 41.61	32 17 2.36	76.31		
. .	. .	. . . .	— 5 54.83	2 14.71	66 26 21.30	27 32 42.05	78.62		
53.0	46.0	. . . .	+ 21.99	2 8.76	65 27 31.27	26 33 52.02	79.44		
52.0	45.1	. . . .	— 1 2.61	2 30.68	68 41 28.90	29 47 49.65	80.90		
. .	. .	. . . .	+ 33.26	2 33.49	69 3 7.43	30 9 28.18	81.09		
. .	. .	. . . .	14.69	2 33.47	69 2 48.84	30 9 9.59	81.22		
. .	. .	. . . .	+ 6 59.80	2 34.37	69 9 34.85	30 15 55.60	81.28		8th magnitude.
52.0	64.9	. . . .	— 17.84	2 36.10	69 22 18.61	30 28 39.36	81.34		
. .	.	29.8231	58.75	37.70	40 29 41.05	— 1 35 39.97		N.	Unsteady.
52.7	42.3	. . . .	— 1 40.90	+ 37.71	40 28 58.91				
50.2	46.3	. . . .	+ 7.07	— 1 17.44	307 28 52.21	+ 88 35 12.96	85.50		Excessively tremulous.
. .	. .	. . . .	— 50.18	+ 1 13.78	53 55 24.92	— 14 45 36.78			
51.9	50.1	. . . .	+ 1 54.25	1 12.27	53 23 7.14				
54.9	48.8	. . . .	— 17.20	5 39.11	80 35 25.13	— 41 41 45.88	45.30		
. .	. .	. . . .	40.38	+ 6.11	185 54 27.45	+ 44 48 6.70	73.89		Unsteady.
. .	. .	. . . .	— 2 17.96	— 55.26	316 51 43.68	82 1 55.57	79.89		Hour angles from —3m. 8s. to —1m. 7s.
54.2	48.1	. . . .	+ 2 20.93	+ 55.27	223 8 15.68	82 1 54.93	— 79.89		Hour angles from 0s. to 5m. 2s. Bar. and
. .	. .	. . . .	— 17.69	+ 1 38.75	239 11 22.94	81 54 57.81	+ 83.88		Ther. read at 21h. 0m.
. .	47.5	. . . .	+ 15.80	— 1 38.78	300 48 36.49	81 54 57.24	+ 83.88		
. .	. .	. . . .	+ 2 19.65	— 33.66	150 21 46.24	9 15 25.49	— 78.95		Good observation.
. .	. .	. . . .	— 2 18.43	+ 33.66	29 38 14.40	9 15 24.85	78.95		
. .	. .	. . . .	+ 21.79	— 40.19	325 49 41.98	73 3 57.27	92.06		
53.4	46.6	. . . .	— 2 30.47	+ 2 17.90	66 54 49.60	— 28 1 10.35	— 69.61		
. .	. .	. . . .	— 1 8.04	+ 1 28.15	236 10 20.96	+ 84 55 59.79	+ 92.92		
. .	. .	. . . .	+ 1 8.62	— 1 28.15	303 49 39.54	+ 84 56 0.29	+ 92.92		
. .	45.9	. . . .	1 23.10	+ 2 34.16	69 8 59.46	— 30 15 20.21	— 76.19		
. .	. .	. . . .	+ 1 33.35	+ 2 34.88	69 14 10.33	— 30 20 31.08	— 76.86		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
44–45	Sun	16′ 8″.89
40–41	Venus	21.83

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.	
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.
Nov. 2	1	α Ursæ Majoris S. P.	5	V–I.	281 24 57.0	61.4	60.0	57.0	62.3	53.2	58.48	25.5130	.5323
	2	γ Piscium	5	I–IX.	36 19 58.1	63.9	63.6	61.1	65.0	56.4	61.35	29.1832	.1946
	3	θ Piscium, (Ref.)	3	I–III.	146 44 58.0	61.9	61.4	59.3	64.0	56.8	60.23	29.5900	.5654
	4	θ Piscium	3	VII–IX.	33 14 56.0	62.9	60.9	60.2	63.7	55.7	59.90	30.0563	.0820
	5	γ Cephei, (Ref.)	3	IV½–V½.	217 59 59.7	63.9	64.4	62.2	64.7	61.6	62.75	33.1570	.1719
	6	γ Cephei	3	VIII–IX.	321 59 60.2	65.2	66.3	62.3	66.5	58.5	63.17	26.7467	.6132
	7	ω Piscium	5	I–IX.	32 44 57.1	63.9	61.8	60.3	65.3	57.3	60.93	27.5532	.5397
	8	4 Draconis S. P.	2	5, 1.	297 19 58.9	64.5	. .	. .	64.6	55.2	61.21	34.3340	.3438
	9	4 Draconis S. P., (Ref.)	2	I⅘, I–⅕.	242 39 57.1	62.4	62.0	59.4	63.3	57.0	60.20	25.6050	.3954
	10	Neptune	2	VII–IX.	38 44 57.8	64.5	63.9	61.5	66.9	57.7	62.05	29.9690	.9871
	11	Nadir	4	. .	179 59 58.0	64.4	64.5	62.5	63.4	56.7	61.58*d*	29.8682	.8667
3	12	Lacaille 9479	5	III–VII.	62 19 58.6	63.1	60.1	58.0	65.0	59.0	60.63	29.7950	.7902
	13	Lacaille 9534	5	III–VII.	71 29 58.9	63.2	61.2	59.0	65.9	60.8	61.50	33.3192	.3337
	14	Anon. 23h. 33m. 28s.	1	V.	" " "	"	"	"	"	"	"	28.2900	.3012
	15	Lacaille 9610	5	III–VII.	64 54 59.3	62.6	61.8	59.3	66.1	58.9	61.33	26.5304	.5250
	16	Lacaille 9652	5	III–VII.	61 34 58.2	64.0	61.6	59.1	66.4	60.1	61.57	26.4876	.4853
	17	Anon. 23h. 51m. 8s.	1	V.	" " "	"	"	"	"	"	"	36.9430	.9448
	18	Nadir 0h. 23m.	3	. .	179 59 58.0	63.0	62.0	58.8	63.5	57.8	60.52*d*	29.8740	.8711
	19	Lacaille 157	5	III–VII.	64 44 58.2	62.0	61.0	59.4	65.1	58.0	60.62	33.9094	.9128
	20	Anon. 0h. 33m. 7s.	1	V.	" " "	"	"	"	"	"	"	42.9070	.9066
	21	Anon. 0h. 34m. 51s.	3	VI, VII.	" " "	"	"	"	"	"	"	23.9790	.0010
	22	Anon. 0h. 42m. 40s.	3	IV–VI.	62 59 58.6	62.8	60.0	59.0	64.8	58.4	60.60	37.6160	.6039
	23	Lacaille 224	3	VI–VIII.	" " "	"	"	"	"	"	"	33.8497	.8629
	24	Lacaille 256	9	I–IX.	67 24 59.1	66.0	64.0	61.0	67.7	60.9	63.12	35.5003	.5055
	25	Anon. 0h. 56m. 46s.	1	V.	" " "	"	"	"	"	"	"	24.2700	.2820
	26	Anon. 1h. 1m. 7s.	5	III–VII.	" " "	"	"	"	"	"	"	42.7808	.7760
	27	Polaris	3	1–V.	310 19 59.1	62.3	62.8	56.0	65.3	57.0	60.42	30.6600	.6429
	28	Polaris	2	4–5.	310 24 59.8	63.9	63.0	56.8	65.3	57.5	61.05	40.2315	.2387
	29	Venus S. L.	3	I, V, IX.	40 29 57.7	66.3	62.8	64.1	64.9	59.8	62.60	24.8600	.8573
	30	Venus N. L.	2	III–VII.	" " "	"	"	"	"	"	"	26.1490	.1609
	31	Polaris S. P.	7	4½–I½.	307 29 58.9	65.0	63.9	58.9	65.5	57.0	61.53	29.6220	.6125
	32	Mercury, centre	7	II–VIII.	47 4 57.8	64.2	62.0	61.0	65.5	57.5	61.33	25.8021	.7965
	33	Nadir 14h. 25m.	3	. .	179 59 56.8	60.4	60.1	58.0	59.8	54.1	58.20	29.7676	.7695
4	34	Sun N. L.	4	I–IV.	53 59 57.9	64.6	62.1	61.0	65.0	56.7	61.22	31.0212	.0066
	35	Sun S. L.	4	VI–IX.	54 29 58.2	64.0	62.0	61.5	65.7	57.1	61.42	26.5462	.5697
	36	β Ursæ Minoris	5	IV–VI.	324 9 58.9	64.0	64.9	58.6	66.1	57.7	61.70	26.8066	.7913
	37	δ Ursæ Minoris	2	4, 5.	312 19 57.7	61.2	61.9	55.6	64.0	55.2	59.27	33.3600	.3646
	38	α Lyræ	5	I–IX.	0 14 58.0	62.9	61.1	59.3	64.0	57.6	60.48	32.1848	.1770
	39	Nadir 18h. 40m.	4	. .	179 59 57.5	61.4	62.2	57.4	62.6	56.1	59.53*d*	29.8112	.8118
	40	1 (Hev.) Draconis S. P.	4	IV–V.	300 49 59.1	62.9	62.0	58.0	66.0	58.0	61.00	29.4065	.4250
	41	1 (Hev.) Dra's S.P., (Ref.)	3	VI, VII.	239 9 59.8	62.7	63.2	59.3	67.0	61.3	62.22	30.3753	.3218
	42	ε Pegasi	2	I–III.	29 39 58.4	63.4	62.2	59.8	66.6	58.3	61.45	34.3565	.3584
	43	ε Pegasi, (Ref.)	2	VII–IX.	150 19 57.3	61.5	62.0	59.1	63.9	56.3	60.02	25.3235	.3426
	44	Lacaille 8965	5	III–VII.	70 4 58.6	63.8	62.4	60.1	66.1	59.5	61.75	28.3234	.3374
	45	B. A. C. 7729	5	III–VII.	66 39 58.5	63.0	63.0	59.4	65.3	58.7	61.33	28.8852	.8873
	46	Lacaille 9093	3	IV–VI.	61 49 59.5	64.1	62.7	60.3	66.5	59.3	62.07	29.1657	.1820
	47	B. A. C. 3593, S.P., (Ref.)	3	IV–V.	244 39 59.0	63.3	63.2	60.7	64.7	60.2	61.85	30.0180	.0190
	48	B. A. C. 3593, S. P.	4	VI½–VIII.	295 19 60.2	63.3	63.0	59.4	66.9	58.3	61.85	29.7262	.7780
	49	B. A. C. 7990	4	IV–V.	316 29 59.5	61.3	62.5	57.3	65.1	58.0	60.62	33.1335	.1289
	50	B. A. C. 7990, (Ref.)	3	. .	223 29 57.5	60.9	60.4	57.7	61.2	57.5	59.20	26.4847	.5773
	51	α Ursæ Majoris, S. P.	4	IV–I.	281 24 57.7	61.1	60.6	56.4	62.9	54.9	58.93	25.6130	.6333
	52	ο Cephei	5	III–VII.	331 34 58.9	62.6	64.5	61.9	64.7	56.9	61.58	36.0732	.0638
	53	B. A. C. 8213, (Ref.)	5	. .	227 39 58.0	62.4	62.1	58.0	62.9	59.7	60.52	31.7308	.7218
	54	B. A. C. 8213	4	. .	312 19 58.4	61.4	62.0	57.2	63.8	55.5	59.72	27.9878	.9331
	55	ω Piscium, (Ref.)	2	I, III.	147 14 58.8	63.8	63.0	59.3	64.1	57.8	61.13	32.1790	.1731
	56	ω Piscium	2	VII, IX.	32 44 60.1	66.2	64.9	62.5	68.8	60.7	63.87	27.6475	.6451
	57	Neptune	2	VII, IX.	38 44 60.8	66.8	65.9	63.5	69.5	61.4	64.65	28.2540	.2811
	58	α Cassiopeæ	5	III–VII.	34 34 57.6	62.5	64.0	57.6	64.7	56.0	60.40	27.4546	.4433
	59	β Ceti	5	I–IX.	57 34	63.2	62.2	60.4	65.8	58.7	61.49	27.8674	.8729
	60	Nadir 0h. 50m.	4	. .	179 59 58.2	64.6	64.1	62.1	64.0	57.7	61.78	29.8806	.8798
	61	ε Piscium	5	I–IX.	31 44 57.5	63.2	62.0	60.0	64.2	56.5	60.57	32.8404	.8323
	62	Polaris, (Ref.)	3	2–4.	229 39 59.0	63.1	63.1	61.5	64.4	60.7	61.97	29.0633	.0729

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	″ ″	′ ″	° ′ ″	° ′ ″	″		
52. 3	45. 6	29. 8231	+ 2 14. 53	— 4 45. 09	281 22 27. 92	+ 62 28 48. 67	+ 92. 39	N.	
. . .	45. 1	. . . .	19. 71	+ 43. 66	36 21 4. 72	2 32 34. 53	— 88. 81		
. . .	. . .	. . . .	+ 8. 08	— 38. 93	146 44 29. 38	5 38 8. 63	89. 65		
. . .	44. 9	. . . .	— 8. 12	+ 38. 93	33 15 30. 71	5 38 8. 54	89. 65		
. . .	. . .	. . . .	— 1 45. 00	+ 46. 33	218 59 4. 08	76 52 43. 33	98. 19		
. . .	. . .	. . . .	+ 1 40. 64	— 46. 33	322 0 57. 48	76 52 41. 77	98. 19		First hour angle 2m. 23s.
51. 2	45. 0	. . . .	+ 1 11. 60	+ 38. 21	32 46 50. 74	6 6 48. 51	— 90. 19		
. . .	. . .	. . . .	— 2 21. 73	— 1 54. 51	297 15 44. 97	78 22 5. 72	+ 93. 60		The mean of microscopes is corrected for the deficient readings by + 0. 41″, derived from the mean of the three observations preceding and following.
. . .	45. 4	. . . .	+ 2 18. 82	+ 1 54. 48	242 44 13. 50	78 22 7. 25	+ 93. 60		
. . .	. . .	. . . .	— 5. 15	47. 39	38 45 44. 29	+ 0 7 54. 96			
58. 0	57. 5	29. 8545	+ 2. 02	1 49. 64	62 21 52. 29	— 23 28 13. 04	— 81. 43	Ha.	9. Hour angles 3m. 29s. and 4m. 25s.
. . .	. . .	. . . .	— 1 49. 09	2 50. 94	71 31 3. 35	32 37 24. 10	79. 39		
. . .	. . .	. . . .	+ 48. 70	2 51. 56	71 33 41. 76	32 40 2. 51	79. 55		9th magnitude.
. . .	. . .	. . . .	1 44. 39	2 3. 54	64 58 49. 26	26 5 10. 01	81. 75		
. . .	. . .	. . . .	+ 1 45. 63	1 47. 13	61 38 34. 33	22 44 55. 08	82. 83		
58. 0	54. 0	. . . .	— 3 42. 30	1 46. 76	61 33 6. 03	22 39 26. 78	82. 88		9th magnitude.
. . .	. . .	. . . .	2 7. 24	2 2. 88	64 44 56. 26	25 51 17. 01	81. 61		
. . .	. . .	. . . .	— 6 49. 22	2 2. 47	64 40 13. 87	25 46 34. 62	81. 58		9th magnitude.
57. 0	52. 0	. . . .	+ 3 3. 53	2 3. 43	64 50 7. 58	25 56 28. 33	81. 45		7th magnitude.
. . .	. . .	. . . .	— 4 2. 97	1 53. 80	62 57 51. 43	24 4 12. 18	81. 48		8th magnitude.
. . .	. . .	. . . .	2 5. 67	1 53. 96	62 59 48. 89	24 6 9. 64	81. 46		
57. 0	51. 5	. . . .	— 2 57. 18	2 19. 22	67 24 25. 16	28 30 45. 91	80. 64		
. . .	. . .	. . . .	+ 2 54. 73	2 20. 02	67 30 17. 87	28 36 38. 62	79. 61		9th magnitude.
. . .	. . .	. . . .	— 6 45. 14	+ 2 19. 04	67 20 37. 02	— 28 26 57. 77	79. 33		8th magnitude.
. . .	. . .	. . . .	24. 72	— 1 8. 95	310 18 26. 75	+ 88 35 12. 62			
56. 5	50. 1	. . . .	— 5 25. 58	— 1 8. 95	310 18 26. 52				
. . .	. . .	29. 8256	+ 2 35. 77	+ 37. 30	40 33 15. 67	— 1 39 14. 70		N.	
50. 5	50. 1	. . . .	1 54. 90	+ 37. 28	40 32 34. 78				Good.
52. 8	55. 5	. . . .	6. 68	— 1 15. 90	307 28 52. 32	88 35 13. 06	— 86. 22		
54. 0	56. 8	. . . .	+ 2 6. 32	+ 57. 33	47 8 4. 98	8 14 25. 73			
. . .	. . .	. . . .	— 37. 02	1 12. 71	54 0 36. 91	— 15 23 8. 08			
55. 0	57. 8	. . . .	+ 1 42. 08	+ 1 14. 25	54 32 57. 75				
. . .	58. 2	. . . .	+ 1 35. 14	— 41. 80	324 10 55. 04	+ 74 42 44. 21	+ 56. 32		
57. 3	57. 9	. . . .	— 1 50. 96	— 1 3. 54	312 17 4. 77	86 36 34. 48	— 25. 78		
. . .	. . .	. . . .	— 1 13. 72	+ 0. 23	0 13 46. 99	38 39 52. 26	— 30. 78		Good observation.
. . .	. . .	. . . .	+ 12. 56	— 1 38. 01	300 48 35. 55	81 54 56. 30	+ 84. 10		
56. 2	50. 6	. . . .	— 15. 56	+ 1 38. 04	239 11 24. 70	81 54 56. 05	+ 84. 10		First reading at hour angle 1m. 26s.
. . .	. . .	. . . .	— 2 22. 12	+ 33. 46	29 38 12. 79	9 15 26. 46	— 78. 89		
. . .	49. 5	. . . .	+ 2 20. 55	— 33. 46	150 21 47. 11	+ 9 15 26. 36	78. 89		
. . .	. . .	. . . .	46. 66	+ 2 41. 23	70 8 29. 64	— 31 14 50. 39	67. 06		
. . .	48. 4	. . . .	29. 42	2 15. 92	66 42 46. 67	27 49 7. 42	71. 03		7th magnitude.
. . .	. . .	. . . .	20. 18	1 49. 69	61 52 11. 94	— 22 58 32. 69	— 73. 82		7.7 magnitude.
. . .	. . .	. . . .	6. 07	+ 2 3. 87	244 41 59. 65	+ 76 24 21. 10	+ 93. 54		
. . .	48. 6	. . . .	+ 1. 49	— 2 3. 87	295 17 59. 47	76 24 20. 22	+ 93. 54		
. . .	. . .	. . . .	— 1 43. 57	— 56. 02	316 27 21. 03	82 26 18. 22	— 97. 95		
. . .	. . .	. . . .	+ 1 41. 84	+ 56. 02	223 32 37. 06	82 26 16. 31	— 97. 95		Only seen at intervals. Hour angles 2m. 8s., 3m. 16s., 4m. 11s.
54. 6	47. 3	. . . .	+ 2 11. 44	— 4 43. 88	281 22 26. 49	62 28 47. 24	+ 92. 93		
. . .	. . .	. . . .	— 3 15. 59	— 32. 06	331 31 13. 93	67 22 25. 32	— 99. 14		
. . .	. . .	. . . .	— 59. 44	+ 1 4. 85	227 40 5. 93	86 33 45. 18	98. 26		Hour angles —1m. 23s. to + 1m. 15s.
54. 0	46. 4	. . . .	+ 59. 33	— 1 4. 71	312 19 54. 34	86 33 44. 91	98. 26		Hour angles from 2m. 52s. to 5m. 4s.
. . .	. . .	. . . .	— 1 13. 61	— 38. 14	147 13 9. 38	6 6 48. 63	90. 16		
. . .	45. 8	. . . .	+ 1 8. 37	+ 38. 14	32 46 50. 38	6 6 48. 87	90. 16		
53. 1	45. 1	. . . .	+ 48. 42	+ 47. 45	38 46 40. 52	0 6 58. 73			
. . .	. . .	. . . .	1 14. 69	— 18. 03	343 5 57. 06	+ 55 47 42. 19	94. 03		
. . .	45. 0	. . . .	+ 1 1. 22	+ 1 33. 26	57 37 35. 97	— 18 43 56. 72	82. 80		″ — 0. 29 applied to mean of four microscopes.
52. 2	44. 5	. . . .	— 1 34. 27	36. 70	31 44 3. 00	+ 7 9 36. 25	86. 21		
. . .	. . .	. . . .	+ 23. 60	+ 1 9. 81	229 41 35. 38	+ 88 35 14. 63	— 86. 39		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
34–35	Sun	16′ 10″. 42
29–30	Venus	21. 72

DATE.	Number.	OBJECT.	No. of Mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 4	1	Polaris	5	. .	310 19 56.7	61.7	61.3	56.5	62.7	54.4	58.88	30.6582	.6031	. .
	2	Venus N. L. . . .	5	I-IX.	40 34 56.4	64.0	61.0	60.7	63.8	58.1	60.67	29.7084	.6964	30.034
	3	Venus S. L. . . .	4	II-VIII.	" " "	"	"	"	"	"	"	28.4387	.4388	. .
	4	Polaris, S. P. . . .	5	5.	307 34 57.2	62.5	60.2	55.5	62.5	56.2	59.02	39.0834	.0925	. .
	5	Polaris, S. P. . . .	5	2.	307 29 57.5	62.0	60.5	55.9	62.9	56.5	59.22	29.5416	.5334	30.008
	6	Polaris, S. P. . . .	5	IV.	307 24 57.5	62.0	60.5	56.1	63.1	56.3	59.25	19.8192	.9791	. .
	7	Mercury, centre . .	5	III-VII.	47 44 55.9	62.0	59.0	59.0	64.3	57.9	59.68	32.0236	.0311	29.982
5	8	Sun S. L.	4	I-IV.	54 49 55.9	62.6	58.8	58.7	65.0	58.0	59.83	29.5695	.5373	29.930
	9	Sun N. L. . . .	4	VI-IX.	54 19 55.5	62.5	58.0	57.4	63.5	57.2	59.02	33.9155	.9495	. .
	10	Nadir 16h. 0m. . .	5	. .	179 59 57.5	59.8	59.1	54.9	61.6	57.0	58.32*d*	29.7405	.7420	. .
	11	Venus S. L. . . .	5	I-IX.	40 39 59.2	65.0	63.0	61.6	65.9	62.1	62.80	30.6036	.5913	. .
	12	Venus N. C. . . .	4	II-VIII.	" " "	"	"	"	"	"	"	31.8256	.8203	29.872
	13	Mercury, centre . .	5	I-IX.	48 19 57.4	62.4	60.0	58.2	66.9	59.6	60.75	27.9030	.9065	29.878
	14	Nadir 14h. 10m. . .	2	. .	179 59 57.7	62.3	62.1	56.8	64.0	57.9	60.13	29.7790	.7808	. .
6	15	Sun S. L.	4	I-IV.	55 9 57.5	61.8	60.9	57.1	66.1	59.3	60.45	33.1370	.1280	. .
	16	Sun N. L.	4	VI-IX.	54 34 56.4	69.6	58.8	55.3	64.1	56.5	58.62	27.8402	.8690	29.878
	17	Nadir 20h. 40m. . .	4	. .	179 59 57.5	63.0	62.7	57.6	64.0	56.6	60.23	29.8142	.8146	. .
	18	Lacaille 8640 . . .	5	III-VII.	69 4 56.3	62.2	62.1	58.5	63.8	58.5	60.23	27.0244	.0351	30.013
	19	Lacaille 8693 . . .	3	III-VII.	76 34 56.8	62.3	62.6	58.2	65.0	57.1	60.33	25.9927	.0048	. .
	20	Lacaille 8776 . . .	5	III-VII.	66 39 57.4	61.7	62.2	58.2	64.1	58.4	60.33	33.2186	.2350	. .
	21	B. A. C. 7419 . . .	5	III-VII.	64 39 58.3	63.4	62.6	59.6	64.7	58.6	61.20	32.7738	.7681	. .
	22	B. A. C. 7434 . . .	3	IV-VI.	" " "	"	"	"	"	"	"	28.1303	.1427	. .
	23	β Cephei	3	III, V, VII.	328 54 58.5	63.4	64.1	57.6	63.0	57.2	60.63	28.0020	.9807	. .
	24	β Cephei (comp.) . .	2	IV, VI.	" " "	"	"	"	"	"	"	27.8690	.8538	30.025
	25	Lacaille 8902 . . .	5	III-VII.	64 24 58.2	62.1	62.0	59.4	63.4	57.5	60.43	32.9900	.9982	. .
	26	Lacaille 8965 . . .	5	III-VII.	70 4 57.6	63.5	61.9	59.6	64.5	59.8	61.15	28.2260	.2429	. .
	27	Lacaille 9003 . . .	5	III-VII.	66 54 57.5	61.6	62.5	59.5	63.8	58.6	60.58	34.4696	.4700	30.028
	28	B. A. C. 7729 . . .	5	III-VII.	66 39 57.9	61.5	61.8	59.3	63.5	58.5	60.42	28.7954	.7913	. .
	29	B. A. C. 7739 . . .	1	VI.	" " "	"	"	"	"	"	"	36.2090	.2300	. .
	30	Anon. 22h. 18m. 42s. .	1	V.	67 54 59.3	65.5	64.4	62.1	67.0	62.0	63.38	30.5450	.5348	. .
	31	η Aquarii	5	I-IX.	39 39 57.7	63.5	61.5	60.9	65.5	59.7	61.47	26.6220	.6087	30.038
	32	α Piscis Australis . .	5	I-IX.	69 9 57.5	63.5	63.9	61.8	63.6	59.4	61.62	26.7880	.7943	30.044
	33	α Pegasi	6	I-IX.	24 24 57.0	62.1	61.2	58.9	61.7	54.7	59.27	30.7422	.7244	. .
	34	Nadir 23h. 2m. . . .	4	. .	179 59 58.1	63.2	64.3	60.3	62.1	56.5	60.75*d*	29.8330	.8326	. .
	35	Polaris, S. P. . . .	5	5.	307 24 58.2	65.8	64.4	61.6	63.1	54.5	61.27	19.9738	.9858	30.060
	36	Polaris, S. P. . . .	3	V.	307 29 59.1	67.4	65.0	63.0	64.6	56.9	62.67	29.6113	.5980	. .
	37	Polaris, S. P. . . .	3	1.	307 34 60.0	68.0	64.7	63.1	65.3	56.7	62.97	39.1387	.1576	. .
	38	Mercury S. L. . . .	4	II-VIII.	48 59 60.4	69.9	66.7	68.8	69.0	62.2	66.17	33.0530	.0636	. .
	39	Mercury N. L. . . .	3	III-VII.	" " "	"	"	"	"	"	"	33.2320	.2461	30.036
	40	α Bootis	5	III-VII.	18 59 55.5	63.4	61.0	61.1	61.8	52.5	59.22	30.3494	.3541	. .
7	41	Sun N. L.	4	I-IV.	54 54 55.9	64.1	61.0	62.0	63.1	54.5	60.10	32.1535	.1454	30.000
	42	Sun S. L.	4	VI-IX.	55 24 55.0	63.5	60.7	62.6	63.1	55.5	60.07	27.7387	.7609	. .
	43	Nadir 15h. 18m. . .	3	. .	179 59 55.0	61.2	59.7	58.0	59.0	52.1	57.50*d*	29.7632	.7645	. .
	44	δ Ursæ Minoris . . .	3	. .	312 19 54.9	58.1	59.0	53.0	60.0	50.6	55.93	33.2917	.2579	29.854
	45	α Lyræ	5	III-VII.	0 14 55.5	61.2	59.5	57.9	61.6	54.0	58.28	32.0982	.1018	. .
	46	Nadir 19h. 33m. . .	3	. .	179 59 55.1	59.0	58.3	55.7	58.9	52.7	56.62	29.7120	.7149	. .
	47	Anon. 0h. 55m. 4s. .	3	IV-VI.	31 44 54.8	61.1	58.0	57.8	61.2	54.2	57.85	38.3583	.3648	29.840
	48	ε Piscium	3	V-VII.	" " "	"	"	"	"	"	"	32.6970	.6884	. .
	49	Anon. 0h. 57m. 54s.	1	V.	" " "	"	"	"	"	"	"	33.6010	.5879	. .
	50	Polaris	3	2.	310 14 54.1	60.3	60.3	54.3	61.3	52.2	57.08	21.0497	.0555	. .
	51	Polaris	3	5.	310 19 54.0	60.2	59.5	54.1	60.8	51.8	56.73	30.5780	.5573	. .
	52	Polaris	1	VI.	310 24 54.1	60.1	59.0	54.0	60.5	51.8	56.58	40.2130	.0438	29.838
	53	Nadir 1h. 47m. . .	3	. .	179 59 53.6	60.1	58.8	56.7	58.7	51.5	56.57*d*	29.7228	.7116	. .
9	54	Venus S. L. . . .	5	I-IX.	41 4 59.1	70.2	65.0	69.9	66.0	60.5	65.12	33.8368	.8325	. .
	55	Venus N. L. . . .	4	II-VIII.	" " "	"	"	"	"	"	"	34.9362	.9382	30.304
10	56	Sun S. L.	4	I-IV.	56 19 55.7	66.7	63.1	66.4	63.8	55.8	61.92	33.7655	.7369	. .
	57	Sun N. L.	4	VI-IX.	55 49 54.9	65.2	62.4	65.8	62.5	54.2	60.83	38.2070	.2530	30.320
	58	Nadir 16h 41m. . .	3	. .	179 59 53.8	63.8	61.2	60.2	60.0	50.1	58.18*d*	29.7431	.7450	. .
	59	Venus S. L. . . .	4	I, III, VII, IX	41 9 57.4	68.5	65.3	69.1	65.2	58.0	63.92	28.6515	.6388	. .
	60	Venus N. C. . . .	4	II-VIII.	" " "	"	"	"	"	"	"	29.8285	.8233	30.263
	61	Polaris, S. P. . . .	5	5-1.	307 29 57.3	66.4	63.1	62.4	63.5	53.5	61.03	29.4236	.4287	30.241

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
- -	44.7	29.8256	— 24.38	— 1 9.81	310 18 24.69	+ 88 35 14.56	— 86.39	N.	Hour angles from 4m. 5s. to 6m. 29s.
- -	- -	29.7956	+ 3.11	+ 34.73	40 35 38.51	— 1 42 19.73		Ha.	Very unsteady.
54.5	57.0	. . . .	+ 42.55	+ 36.23	40 36 19.45				
- -	- -	. . . .	— 4 51.48	— 1 14.28	307 28 53.26	+ 88 35 13.81	86.62		All at wire 5.
56.5	60.5	. . . .	+ 8.22	1 14.28	307 28 53.16				All at wire 2.
- -	- -	. . . .	+ 5 7.78	— 1 14.28	307 28 52.75				All at wire IV.
58.0	62.0	. . . .	— 1 10.10	+ 57.20	47 44 46.78	— 8 51 7.53			
60.5	64.5	. . . .	+ 8.10	1 12.96	54 51 20.89	15 41 31.30			
- -	- -	. . . .	— 2 10.23	1 11.42	54 19 0.21				
- -	- -	29.7767	25.54	36.38	40 40 13.64	1 46 14.35		N.	
57.5	57.2	. . . .	— 1 4.08	36.36	40 39 35.08				
60.9	62.0	. . . .	+ 58.63	0 58.42	48 21 57.80	9 28 18.55			Sun had been shining on pier. High wind. Image seen with great difficulty.
- -	- -	. . . .	— 1 45.07	1 14.30	55 9 29.68	15 59 41.17			
61.5	60.4	. . . .	+ 59.81	1 12.74	54 37 11.17				
58.7	51.0	29.8080	1 26.94	2 31.17	69 8 58.34	30 15 19.09	55.17		Magnitude 7.5.
- -	- -	. . . .	+ 1 59.24	3 59.63	76 40 59.20	37 47 19.95	54.38		Magnitude 7.5.
-	50.9:	. . . .	— 1 47.45	2 13.87	63 40 26.75	27 46 47.50	60.54		
- -	- -	. . . .	— 1 32.81	2 2.20	64 40 30.59	25 46 51.34	62.18		Magnitude 6:
- -	- -	. . . .	+ 52.21	+ 2 2.47	64 42 55.88	— 25 49 16.63	62.59		Magnitude 7.5:
- -	- -	. . . .	57.29	— 35.12	328 55 22.80	+ 69 58 16.45	88.08		
57.7	50.0	. . . .	+ 1 1.27	— 35.12	328 55 26.78	+ 69 58 12.47	88.08		
- -	- -	. . . .	— 1 40.03	+ 2 1.02	64 25 21.42	— 25 31 42.17	66.63		
- -	- -	. . . .	+ 49.07	2 39.62	70 8 29.84	31 14 50.59	66.84		
56.3	50.1	. . . .	— 2 26.16	2 15.67	66 54 50.09	28 1 10.84	69.20		Magnitude 6.7.
- -	- -	. . . .	+ 31.87	2 14.48	66 42 46.77	27 49 17.52	70.78		Magnitude 6.5.
- -	49.6	. . . .	— 3 21.35	2 14.10	66 38 53.17	27 45 13.92	71.00		Magnitude 7.0.
- -	- -	. . . .	— 22.78	2 23.17	67 57 3.77	29 3 24.52	72.74		Magnitude 8.3.
55.2	47.4	. . . .	+ 1 40.31	48.64	39 42 30.42	0 48 51.17	83.48		
- -	45.9	. . . .	+ 1 34.49	2 33.58	69 14 9.69	— 30 20 30.44	76.32		
- -	- -	. . . .	— 28.73	+ 26.73	24 24 57.27	+ 14 28 41.98	90.81		
50.0	52.1	29.8441	+ 5 0.9	— 1 15.66	307 28 54.70	+ 88 35 15.65	— 87.34	Ha.	All at wire 5.
- -	- -	. . . .	+ 7.71	1 15.66	307 28 54.72				All at wire V.
- -	- -	. . . .	— 4 52.02	— 1 15.66	307 28 55.29				All at wire 2.
- -	- -	. . . .	1 40.95	+ 1 1.24	48 59 26.46	— 10 5 44.36			
52.5	54.0	. . . .	1 46.66	1 1.24	48 59 20.75				
- -	54.5	. . . .	15.99	19.91	19 0 3.14	+ 19 53 36.11	+ 63.51		
54.0	55.8	. . . .	— 1 12.15	1 14.72	54 55 2.67	— 16 17 32.94			
- -	- -	. . . .	+ 1 5.32	+ 1 16.33	55 27 21.72				
56.5	58.8	29.8229	— 1 47.70	— 1 2.55	312 17 5.68	+ 86 36 33.57	— 25.01		Observed at 18h. 18m. 30s., 18h. 19m. 0s., and 18h. 19m. 30s. Clock 19s. slow.
- -	- -	. . . .	1 11.45	+ 0.24	0 13 47.07	38 39 52.18	30.23		
54.0	48.1	29.8212	4 27.87	35.89	31 41 5.87	7 12 33.38	86.18		
- -	- -	. . . .	1 29.90	35.96	31 44 3.91	7 9 35.34	86.08		
- -	- -	. . . .	— 1 58.10	+ 35.95	31 43 35.70	7 10 3.55	85.84		
- -	- -	. . . .	+ 4 34.83	— 1 8.43	310 18 23.48	88 35 15.77	87.50		All at wire 2.
- -	- -	. . . .	— 23.08	1 8.43	310 18 25.22	88 35 14.03	87.50		All at wire 5.
54.0	48.1	. . . .	5 20.51	— 1 8.43	310 18 27.64	+ 88 35 11.61	87.50		Through clouds. Seems te be an error in this observation.
- -	- -	29.8030	2 6.34	+ 40.68	41 3 39.46	— 2 9 42.15			
40.5	34.6	. . . .	2 41.01	39.23	41 3 3.34				
- -	- -	. . . .	2 3.34	1 22.85	56 19 21.43	17 9 29.96			
41.5	39.5	. . . .	— 4 24.93	1 21.09	55 46 56.99				
- -	- -	29.8203	+ 37.04	41.04	41 11 22.00	— 2 17 23.39		N.	
36.0	35.6	. . . .	— 0.09	+ 41.03	41 11 44.86				
37.5	39.1	. . . .	+ 12.28	— 1 18.16	307 28 55.15	+ 88 35 15.90	— 88.49		Very tremulous.

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
8-9	Sun	16 10.34
15-16		16 9.26
41-42		16 9.52
56-57		16 12.22
2-3	Venus	20.47
11-12		20.04
54-55		18.06
59-60		19.36

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1833.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Nov. 10	1	Mercury, centre	3	III–VII.	51 29 56.9	66.6	63.7	66.2	65.4	56.5	62.55	33.6710	.6594	30.206
	2	Nadir 14h. 36m.	3	. .	179 59 56.5	65.4	63.1	63.7	62.0	52.9	60.60	29.8280	.8280	
11	3	Sun N. L.	4	I–IV.	55 59 57.6	65.6	63.4	65.8	64.9	56.6	62.32	25.3502	.3392	. .
	4	Sun S. L.	4	VI–IX.	56 34 56.1	65.1	63.0	64.6	64.8	56.7	61.72	30.4000	.4369	30.176
	5	Nadir 21h. 40m.	3	. .	179 59 55.8	62.2	61.3	59.7	61.7	53.1	58.97	29.7980	.7989	
	6	μ Capricorni	5	I–IX.	53 4 55.7	62.4	59.9	58.9	63.7	55.0	59.27	32.3464	.3606	30.024
	7	α Aquarii	5	I–IX.	39 49 56.2	63.1	60.2	60.3	65.9	56.7	60.40	27.1156	.1264	. .
	8	θ Aquarii	5	I–IX.	47 19 56.8	62.5	60.6	59.8	64.9	55.6	60.03	29.8126	.8094	30.022
	9	B. A. C. 7851	2	4–5.	313 29 58.9	63.9	63.4	59.0	67.1	56.5	61.47	31.8695	.8639	. .
	10	λ Aquarii	2	III, V.	47 9 56.5	61.5	60.0	58.7	64.8	55.7	59.53	28.6450	.6265	. .
	11	α Piscis Australis	3	IV–VI.	69 9 58.3	66.5	64.1	64.0	67.9	60.4	63.53	26.8187	.8139	. .
	12	α Ursæ Majoris, S. P.	3	VI–IV.	281 24 58.0	62.9	61.0	58.5	64.6	55.5	60.83	25.8440	.8450	30.017
	13	Venus S. L.	3	IV–VI.	41 19 58.2	68.9	63.8	64.4	68.2	59.4	63.82	31.7350	.7235	30.058
	14	Polaris, S. P.	5	V.	307 29 58.8	66.2	62.7	58.4	66.0	57.1	61.53	29.5270	.5181	30.054
	15	Polaris, S. P.	3	. .	307 24 60.0	67.1	64.0	59.5	66.8	57.8	62.53	19.8610	.9809	. .
	16	Polaris, S. P.	3	IV.	307 34 61.0	68.7	64.7	61.3	69.0	59.3	64.00	38.9843	.1554	. .
	17	Mercury, centre	5	III–VII.	52 4 55.3	64.1	59.5	60.0	64.8	57.3	60.17	29.9782	.9839	30.050
12	18	Sun N. L.	4	I–IV.	56 19 55.0	62.8	58.9	58.0	64.0	56.5	59.20	32.1140	.1065	30.032
	19	Sun S. L.	4	VI–IX.	56 49 56.8	66.2	62.5	61.0	68.5	59.8	62.47	27.5503	.5730	. .
	20	Nadir 16h. 0m.	3	. .	179 59 56.5	62.8	58.0	57.2	62.2	57.1	58.97*d*	29.8251	.8246	
	21	Lacaille 9610	5	III–VII	64 54 56.4	62.1	59.0	57.5	65.2	58.0	59.70	26.4132	.4190	29.986
	22	Lacaille 9652	5	III–VII.	61 34 57.3	64.5	60.2	58.0	66.9	59.5	61.07	26.4378	.4406	. .
	23	Lacaille 9706	5	III–VII.	68 54 57.2	64.0	61.1	60.0	66.3	60.4	61.50	34.1334	.1488	. .
	24	Anon. 23h 59m. 13s.	3	IV–VI.	“ “ “	“	“	“	“	“	“	47.6277	.6157	. .
	25	Neptune, centre	5	III–VII.	38 49 58.2	64.8	61.8	59.7	68.2	60.0	62.12	31.3744	.3800	. .
	26	13 Ceti	5	III–VII.	43 14 59.0	64.8	61.0	59.4	67.5	59.3	61.83	33.4620	.4598	. .
	27	β Ceti	5	III–VII.	57 34 56.9	64.8	60.0	59.0	67.3	60.5	61.42	27.8238	.8202	29.996
	28	Nadir 0h. 46m.	5	. .	179 59 57.0	62.0	59.7	56.3	63.0	56.1	59.02*d*	29.8344	.8292	
	29	Anon. 0h. 55m. 4s.	5	III–VII.	31 44 56.1	62.7	59.0	56.5	65.0	57.3	59.43	38.4182	.4189	. .
	30	ε Piscium	3	V–VII.	“ “ “	“	“	“	“	“	“	32.7610	.7554	. .
	31	Polaris	3	2	310 24 56.0	62.2	59.1	53.3	63.6	54.1	58.05	40.2707	.2750	. .
	32	Polaris	3	3	310 19 56.8	61.5	60.0	54.0	64.2	55.8	58.72	30.7457	.7347	. .
	33	Polaris	3	5	310 14 56.4	62.2	59.8	53.5	64.7	55.7	58.72	21.1447	.1476	. .
	34	θ Ceti	3	IV–VI.	47 44 56.5	60.9	57.6	56.5	64.9	57.5	58.98	28.5517	.5415	30.000
	35	Venus, S. L.	3	I, V, IX.	41 29 57.2	67.9	63.7	65.5	66.5	59.1	63.32	33.5357	.5277	. .
	36	Venus, N. C.	2	III, VII.	“ “ “	“	“	“	“	“	“	34.6755	.6626	30.033
	37	Polaris, S. P.	5	5–1	307 29 57.5	66.7	63.4	60.7	65.2	56.9	61.73	29.5132	.5095	. .
	38	α Bootis	5	I–IX.	18 59 56.6	64.6	62.1	62.3	64.4	55.5	60.92	30.3694	.3661	30.039
	39	Mercury, centre	1	V.	52 39 56.6	64.6	61.6	62.8	64.8	58.8	61.53	27.2160	.2284	30.031
	40	Nadir 15h. 4m.	3	. .	179 59 57.9	63.7	62.4	59.9	62.1	56.4	60.40	29.8438	.8434	
13	41	Sun S. L.	4	I–IV.	57 4 . .	66.5	63.1	63.6	67.1	60.9	63.22	25.5430	.5151	. .
	42	Sun N. L.	4	VI–IX.	56 34 53.2	61.1	58.7	58.8	62.3	55.7	58.30	29.9328	.9674	30.013
	43	α Ophiuchi	5	I–IX.	26 14 57.5	66.5	62.0	60.2	66.3	56.9	61.57	33.2078	.2147	29.977
	44	α Lyræ	5	I–IX.	0 14 57.4	64.4	61.1	58.6	65.5	57.4	60.73	32.1744	.1663	. .
	45	β Lyræ	3	IV–VI.	5 39 58.3	65.4	62.2	59.1	65.7	57.9	61.43	28.2513	.2617	29.980
	46	Nadir 21h. 48m.	3	III–VII.	179 59 58.3	61.4	61.7	56.6	62.5	62.6	60.52	29.8378	.8376	
	47	B. A. C. 7715	5	III–VII.	67 49 56.8	61.4	59.9	57.3	64.5	59.7	59.93	32.0322	.0431	29.989
	48	B. A. C. 7851 (Ref.)	3	I, V.	226 29 56.9	60.1	59.2	56.6	61.8	60.1	59.12	27.8470	.8480	. .
	49	B. A. C. 7851	3	V½–VI.	313 29 58.6	61.0	60.4	55.2	65.3	57.5	59.67	31.8823	.8498	. .
	50	β Ursæ Majoris, S. P.	3	V–III.	276 9 59.8	62.0	60.7	58.6	64.9	58.9	60.82	33.2293	.2513	29.984
	51	Lacaille 9437	3	III–VII.	70 9 56.9	61.8	60.2	57.6	64.5	59.3	60.05	32.3373	.3516	. .
	52	Lacaille 9458	5	III–VII.	70 39 57.1	62.1	59.9	56.8	64.1	58.9	59.82	25.3126	.3273	. .
	53	Lacaille 9489	1	V.	64 59 57.8	60.9	60.5	57.1	63.8	57.2	59.55	26.6340	.6203	. .
	54	γ Cephei, (Ref.)	4	III½–V.	217 59 58.5	60.5	61.0	57.5	63.1	61.2	60.30	33.0240	.0426	29.991
	55	γ Cephei	2	VI½, VII.	321 59 57.6	61.5	62.0	56.4	64.0	57.3	59.80	26.7565	.7054	. .
	56	α Andromedæ	3	III–VII.	10 34 58.0	61.1	61.4	59.3	65.5	57.5	60.97	33.9767	.9753	. .
	57	γ Pegasi	4	I–IX.	24 29 57.6	62.6	60.5	58.5	63.6	57.2	60.00	34.8995	.8942	. .
	58	Neptune	5	I–IX.	38 49 58.0	62.9	62.2	58.9	65.6	59.5	61.35	30.6566	.6427	29.994
	59	α Cassiopæ	5	III–VII.	343 4 57.7	61.3	61.8	55.1	64.0	56.4	59.38	27.5346	.5140	. .
	60	B. A. C. 4342, S. P.	1	V.	303 4 57.6	61.2	60.7	55.0	64.0	55.5	59.00	31.7010	.6879	. .
	61	ε Piscium	5	I–IX.	31 44 58.2	63.7	62.0	58.9	65.9	59.4	61.35	32.8306	.8217	29.998

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860. 0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
39.8	42.4	29.8203	— 2 0.37	+ 1 9.64	51 29 11.82	— 12 35 32.57			
. .	. .	. . .							
. .	. .	. . .	+ 2 20.49	1 20.78	56 3 43.59	17 26 15.00			
41.1	44.0	. . .	— 19.34	1 22.53	56 36 4.91				
45.5	44.7	. . .	— 1 19.65	1 18.36	53 4 57.98	14 11 18.73	— 72.11		
. .	45.2	. . .	+ 1 24.46	49.15	39 52 14.01	0 58 34.76	78.95		
45.6	45.5	. . .	+ 0.34	+ 1 3.79	47 21 4.16	8 27 24.91	78.08		
. .	45.8	. . .	— 1 4.08	— 1 1.95	313 27 55.44	85 25 43.81	97.12		
. .	. .	. . .	+ 37.43	+ 1 3.30	47 11 40.26	8 18 1.01	82.58		Cloudy and faint.
. .	46.8	. . .	1 34.26	+ 2 33.29	69 14 11.08	30 20 31.83	— 75.72		
46.6	46.8	. . .	+ 2 4.64	— 4 42.14	281 22 23.33	62 28 44.08	+ 94.73		
45.5	50.0	29.8576	— 58.50	+ 21.46	41 19 26.78	— 2 25 47.53		Ha.	
47.0	52.0	. . .	+ 10.65	— 1 15.68	307 28 56.50	+ 88 35 17.36	— 88.88		15. Observed at 1h. 18m. 30s., 1h. 19m. 0s.,
. .	. .	. . .	+ 5 9.67	1 15.68	307 28 56.52				and 1h. 19m. 30; clock slow 14s. 16. All
. .	51.2	. . .	— 4 51.52	— 1 15.68	307 28 56.80				at wire IV.
49.0	55.1	. . .	3.95	+ 1 8.97	52 6 5.19	— 13 12 25.94			Very faint.
50.5	63.1	. . .	— 1 10.51	1 17.93	56 20 6.62	17 42 40.93			
. .	. .	. . .	+ 1 11.63	1 19.64	56 52 33.74				
52.5	50.6	29.8605	1 47.91	2 3.83	64 58 51.44	26 5 12.19	80.37		
. .	. .	. . .	+ 1 47.23	1 47.29	61 38 35.59	22 44 56.34	81.51		
. .	. .	. . .	— 2 14.45	2 29.59	68 55 16.64	30 1 37.39	79.47		
. .	. .	. . .	9 16.68	2 28.72	68 48 13.54	— 29 54 34.29	79.51		
. .	. .	. . .	47.65	46.69	38 50 1.16	+ 0 3 38.09			
. .	. .	. . .	— 1 52.85	54.76	43 14 3.74	— 4 20 24.49	85.74		
52.5	49.4	. . .	+ 1 3.97	1 31.69	57 37 37.08	— 18 43 58.83	81.55		
		. . .							
. .	. .	. . .	— 4 28.33	36.02	31 41 7.12	+ 7 12 32.13	86.00		7th magnitude.
.	. .	. . .	1 30.77	+ 36.09	31 44 4.75	7 9 34.50	85.88		
. .	. .	. . .	5 26.53	— 1 8.76	310 18 22.76	+ 88 55 16.43	89.05		All at wires 2, 3, and 5.
. .	. .	. . .	— 27.41	1 8.76	310 18 22.55				
. .	. .	. . .	+ 4 33.18	— 1 8.76	310 18 23.14				
52.5	48.3	. . .	+ 41.36	+ 1 4.32	47 46 44.66	— 8 53 5.41	80.00		
. .	. .	29.8338	— 1 55.81	40.51	41 28 48.02	— 2 34 50.20		N.	
43.4	44.1	. . .	— 2 31.40	+ 40.50	41 28 12.42				
. .	. .	. . .	+ 10.17	— 1 16.37	307 28 55.53	+ 88 35 16.28	— 89.19		
47.5	51.2	. . .	— 16.69	+ 20.05	19 0 4.28	+ 19 53 34.97	+ 64.91		
. .	52.9	. . .	+ 1 21.69	1 11.10	52 42 34.32	— 13 48 55.07			
. .	. .	. . .	+ 2 15.40	1 21.76	57 8 40.38	— 17 58 47.99			Division under microscope A obliterated; correction to mean of 5 — 0″.46 from N. limb.
49.4	55.5	. . .	— 4.19	1 20.00	56 36 14.11				
52.3	63.0	. . .	1 46.00	27.97	26 13 43.54	+ 12 39 55.71	— 0.77		
. .	. .	. . .	— 1 13.14	0.23	0 13 47.82	38 39 51.43	29.34		
. .	62.1	. . .	+ 49.29	5.64	5 40 56.36	+ 33 12 42.89	33.49		
54.1	52.5	. . .	— 1 9.27	2 21.16	67 51 11.82	— 28 57 32.57	69.66		
. .	. .	. . .	+ 1 2.26	+ 1 1.22	226 32 2.60	85 25 41.85	97.50		First reading H. A. = — 1m. 41s.
. .	50.8	. . .	— 1 3.21	— 1 1.24	313 27 55.22	85 25 44.03	— 97.50		
54.1	50.3	. . .	1 47.15	— 8 17.51	275 59 56.16	57 6 16.91	+ 93.79		
. .	49.5	. . .	— 1 18.94	+ 2 40.05	70 11 21.16	31 17 41.91	— 77.15		
. .	. .	. . .	+ 2 21.29	2 45.05	70 45 6.16	31 51 26.91	77.25		
. .	. .	. . .	+ 1 40.75	2 4.63	65 3 44.93	— 26 10 5.68	79.38		
53.8	48.8	. . .	— 1 40.61	+ 45.55	217 59 5.24	+ 76 52 44.49	100.89		Image unsteady.
. .	. .	. . .	+ 1 38.08	— 45.55	322 0 52.33	76 52 46.92	100.89		
. .	49.5	. . .	— 2 9.85	+ 10.86	10 33 1.98	28 20 37.27	94.95		Very unsteady and much blurred.
. .	. .	. . .	2 38.65	26.54	24 27 47.89	14 25 51.36	91.59		Wire III omitted.
53.5	49.0	. . .	— 25.36	+ 46.79	38 50 22.78	0 3 16.47			
.	. .	. . .	+ 1 12.74	— 17.75	343 5 54.37	55 47 44.88	— 95.90		
. .	. .	. . .	— 58.13	— 1 29.62	303 2 31.25	84 8 52.00	+ 92.61		Not good.
53.2	47.8	. . .	— 1 33.69	+ 36.17	31 44 3.83	+ 7 9 35.42	— 85.90		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
3–4	Sun	16 10.66
18–19		16 13.56
41–42		16 13.14
35–36	Venus	18.57

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	i
Nov. 13	1	Nadir 1h. 6m.	3	. .	179 59 58.7	62.6	62.0	58.1	62.9	57.7	60.33	29.8605	.8599	
	2	Venus N. L.	4	II-VIII.	41 34 61.0	73.3	67.7	70.9	70.1	63.0	67.67	24.7765	.7681	29.
	3	Venus N. C.	3	III-VII.	" " "	"	"	"	"	"	"	25.8567	.8534	.
	4	Mercury, centre	5	I-IX.	53 14 56.4	65.0	60.9	62.2	63.2	58.0	60.95	25.3442	.3584	29.
	5	Nadir 15h. 5m.	3	. .	179 59 57.7	65.6	64.0	61.4	62.7	56.6	61.33	28.8833	.8827	
14	6	Sun N. L.	4	I-IX.	56 49 . .	63.5	60.6	61.2	64.0	58.1	60.94	28.4592	.4393	.
	7	Sun S. L.	4	VI-IX.	57 24 . .	67.9	64.6	64.8	68.3	62.0	64.88	33.5995	.6197	29.
15	8	Moon S. L.	5	I-IX.	57 9 . .	65.8	63.2	61.1	67.9	63.0	63.76	34.5194	.5235	29.
	9	Nadir 17h. 15m.	3	. .	179 59 57.7	61.5	62.1	57.8	61.7	55.9	59.45	29.8245	.8248	
16	10	Polaris S. P.	3	5	307 34 54.9	63.2	59.3	56.9	62.0	53.9	58.37	38.9267	.9359	29.
	11	Polaris S. P.	3	V.	307 29 54.7	61.0	58.5	54.6	60.1	53.0	56.98	29.3070	.3174	.
	12	Polaris S. P.	3	2	307 24 55.1	62.2	60.1	55.1	60.5	53.1	57.68	19.7660	.7639	.
17	13	Sun S. L.	4	I-IV.	58 9 56.1	65.2	61.5	62.2	66.1	59.0	61.68	32.6065	.5770	29.
	14	Sun N. L.	4	VI-IX	57 39 57.5	66.7	63.9	63.9	68.0	61.0	63.50	37.2512	.2963	.
	15	Nadir 16h. 32m.	3	. .	179 59 55.2	62.4	59.9	58.0	60.3	53.8	58.27*d*	29.7900	.7905	
	16	ξ Aquarii	5	III-VII.	47 19 56.3	62.3	60.5	58.8	63.0	56.2	59.52	29.4236	.4259	29.
	17	Moon S. L.	5	III-VII.	48 49 55.0	62.0	59.8	59.3	62.5	56.1	59.12	33.6960	.6901	.
	18	θ Aquarii	5	III-VII.	47 24 55.0	61.1	58.8	59.0	62.1	54.5	58.42	39.3028	.3145	29.
	19	ρ Aquarii	3	IV-VI.	" " "	"	"	"	"	"	"	34.2923	.3038	.
	20	53² Aquarii	5	I-IX.	56 19 54.1	62.2	59.5	59.3	62.5	55.7	58.89	33.4396	.4470	.
	21	53¹ Aquarii	4	II-VIII.	" " "	"	"	"	"	"	"	33.6267	.6183	.
	22	σ Aquarii	5	III-VII.	50 14 54.6	60.7	59.5	57.9	61.5	54.8	58.17	30.2504	.2642	.
	23	κ Aquarii	1	IX.	43 49 54.1	62.0	59.0	58.5	61 4	54.2	58.20	33.0180	.0475	29.
	24	τ² Aquarii	5	III-VII.	53 14 54.9	62.1	59.0	58.5	61.0	54.4	58.32	37.7766	.7693	.
	25	Nadir 22h. 49m.	3	. .	179 59 54.0	62.8	60.9	59.6	60.2	53.2	58.45	29.8120	.8120	
	26	α Pegasi	5	III-VII.	24 24 53.0	60.1	58.4	57.0	59.0	51.0	56.42	30.6814	.6660	.
	27	φ Aquarii	3	IV-VI.	45 39 56.1	64.0	62.0	60.2	63.0	54.5	59.97	30.9757	.9799	.
	28	ψ¹ Aquarii	3	IV-VI.	48 44 56.5	63.6	61.5	61.6	64.5	57.0	60.78	35.3690	.3755	.
	29	ψ³ Aquarii	5	III-VII.	49 14 57.5	64.2	61.8	61.0	64.5	57.3	61.05	32.4776	.4745	29.
18	30	Sun S. L.	2	IV-V.	58 24 56.0	64.8	62.0	62.8	65.7	59.5	61.80	33.6320	.6121	.
	31	Sun N. L.	1	VIII.	57 49 59.8	67.1	65.1	65.4	67.5	61.6	64.42	28.6790	.6986	29.
	32	Nadir 22h. 15m.	3	. .	179 59 57.8	64.9	64.4	61.8	63.5	56.5	61.48	29.9034	.9028	
	33	Moon S. L.	5	I-IX.	43 44 57.6	64.9	62.5	61.8	64.7	57.8	61.55	28.8810	.8826	29.
	34	B. A. C. 7990, (Ref.)	1	V.	223 29 58.9	64.4	63.0	61.2	64.0	58.8	61.72	26.5800	.5676	.
	35	β Ursæ Majoris S. P.	5	VII-III.	276 4 59.3	64.1	63.5	61.6	65.0	57.9	61.90	23.6382	.6361	29.
	36	Lacaille 9411	5	III-VII.	64 24 59.1	65.5	64.9	63.5	65.8	58.4	62.87	25.8180	.8151	.
	37	B. A. C. 8314, (Ref.)	2	IV½, VII.	214 44 56.5	61.7	60.4	59.2	59.7	55.7	58.87	29.3385	.3767	29.
	38	Neptune	5	III-VII.	38 49 57.6	65.3	64.8	62.5	66.0	57.7	62.32	27.5250	.5163	.
	39	Polaris, (Ref.)	3	2-4	229 39 58.0	63.0	63.1	61.5	63.4	59.7	61.45	29.9440	.9471	.
	40	Polaris	3	5-6	310 19 59.5	65.9	65.2	60.5	64.9	56.0	62.00	30.9307	.9185	.
	41	η Piscium, (Ref.)	1	IX.	155 44 58.1	65.1	62.8	62.1	63.9	55.3	61.22	28.8190	.8447	29.
	42	o Piscium, (Ref.)	2	I, III.	149 34 57.0	64.1	63.3	62.1	63.1	55.6	60.87	29.1985	.2010	.
	43	o Piscium	2	VII, IX.	30 24 57.9	65.4	63.5	63.9	66.0	57.7	62.40	30.6585	.6546	.
	44	β Arietis	5	I-IX.	18 44 57.5	64.9	63.1	62.8	64.0	55.0	61.22	30.5444	.5249	.
	45	4 Ursæ Minoris, S. P.	2	VI, VII.	297 4 56.5	62.4	60.8	. .	60.9	52.1	58.79	26.6905	.7166	.
	46	5 Ursæ Minoris S.P., (Ref.)	2	III-VI½.	244 4 57.7	65.9	65.1	63.5	64.5	58.2	62.48	27.3385	.3135	29.
	47	π Arietis	2	I, III.	21 59 57.7	65.6	63.9	64.1	64.9	57.5	62.28	31.1515	.1386	.
	48	π Arietis, (Ref.)	2	VII, IX.	157 59 56.1	63.7	61.9	62.5	61.8	53.6	59.93	28.6160	.6271	.
	49	Nadir 2h. 53m.	3	. .	179 59 58.2	65.9	64.9	63.1	62.9	55.8	61.80	29.8919	.8910	.
19	50	Moon S. L.	5	III-VII.	38 34 56.6	63.0	60.6	59.4	65.0	58.5	60.52	33.0074	.0113	29.
	51	Nadir 23h. 42m.	3	. .	179 59 56.4	61.4	60.8	56.9	61.0	55.0	58.58*d*	29.8020	.8023	
	52	Venus S. L.	3	II, V, VIII.	42 44 56.6	64.1	62.2	60.7	64.6	57.1	60.88	24.3087	.3203	.
	53	Venus N. C.	2	IV, VI.	" " "	"	"	"	"	"	"	25.3150	.3252	29.
20	54	Sun N. L.	4	I-IV.	58 19 57.5	66.5	62.6	63.0	67.2	62.0	63.13	32.6392	.6103	.
	55	Sun S. L.	4	VI-IX.	58 49 56.7	65.5	61.9	61.5	67.2	61.6	62.40	27.9412	.9761	29.
	56	Nadir 23h. 5m.	3	. .	179 59 58.8	61.5	61.7	57.1	63.0	58.6	60.12	29.8548	.8542	
22	57	Venus S. L.	5	I-IX.	43 29 64.8	74.8	70.9	73.9	70.6	63.7	69.78	30.6734	.6618	.
	58	Venus N. C.	4	II-VIII.	" " "	"	"	"	"	"	"	31.6870	.6750	30.
	59	Nadir 15h. 45m	3	. .	179 59 58.3	66.4	65.5	63.9	63.6	56.2	62.32	29.9135	.9128	
23	60	Sun S. L.	4	I-IV.	59 29 57.5	64.8	63.5	64.5	65.3	59.7	62.55	29.7472	.7224	.

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
43.5	43.6	29.8413	+ 2 39.09	+ 40.86	41 38 27.62	— 2 44 30.59		N.	
. . .	. . .	. . .	2 5.04	40.85	41 37 53.56				
48.6	51.9	. . .	2 20.55	1 12.47	53 18 33.97	14 24 54.72			
. . .	. . .	. . .	+ 43.95	1 20.85	56 52 5.74	18 14 38.15			— 0.04 applied to mean of last four microscopes.
50.0	53.6	. . .	— 1 58.46	+ 1 22.64	57 24 29.06				
55.0	50.5	29.8413	2 26.80	— 64 40.61	56 2 56.35	— 17 9 17.10			
51.0	46.6	29.8458	— 4 45.00	1 15.89	307 28 57.48	+ 88 35 18.43	— 90.58	Ha.	All at wire 5.
. . .	. . .	. . .	+ 16.57	1 15.89	307 28 57.66				All at wire V.
. . .	. . .	. . .	+ 5 16.10	— 1 15.89	307 28 57.89				All at wire 1.
53.0	51.7	29.8458	— 1 25.63	+ 1 25.15	58 10 1.20	— 19 0 7.94			
. . .	. . .	. . .	— 3 53.60	1 23.29	57 37 33.19				
52.0	46.3	29.8613	+ 13.65	+ 1 2.95	47 21 16.12	8 27 36.87	70.90		
. . .	. . .	. . .	— 2 0.05	— 59 21.06	47 48 38.01	8 54 58.76			
51.5	45.5	. . .	4 56.39	+ 1 3.06	47 21 5.09	8 27 25.84	77.80		
. . .	. . .	. . .	2 19.29	1 3.17	47 23 42.30	8 30 3.05	78.28		
. . .	. . .	. . .	1 52.42	1 27.09	56 19 33.56	17 25 54.31	76.00		
. . .	. . .	. . .	1 57.80	1 27.09	56 19 28.18	17 25 48.93	76.00		
. . .	. . .	. . .	12.63	1 5.23	50 15 50.77	11 22 11.52	78.73		
51.5	45.0	. . .	— 1 39.90	55.81	43 49 14.11	4 55 34.86	81.89		
. . .	. . .	. . .	+ 4 7.94	1 17.66	53 12 8.04	— 14 18 28.79	79.91		
. . .	. . .	. . .	— 25.22	26.44	24 24 57.64	+ 14 28 41.61	90.83		
. . .	. . .	. . .	35.07	59.56	45 40 24.46	— 6 46 45.21	84.63		
. . .	. . .	. . .	2 52.90	1 6.24	48 43 14.12	9 49 34.87	83.67		
51.0	44.7	. . .	1 21.94	1 7.48	49 14 46.59	10 21 7.34	83.71		
. . .	. . .	29.8455	— 1 58.10	1 26.50	58 24 30.20	19 14 38.34		N.	
51.5	50.7	. . .	+ 35.96	+ 1 24.60	57 52 4.98				Cloudy.
51.3	44.1	. . .	30.19	— 55 34.70	42 49 57.04	3 56 17.79			
. . .	43.5	. . .	1 42.78	+ 55.73	223 32 40.23	82 26 19.48	— 100.60		Only half weight.
. . .	43.3	. . .	3 14.68	— 8 22.77	275 59 53.81	57 6 14.56	+ 95.00		
. . .	. . .	. . .	2 6.36	+ 2 2.30	64 29 11.53	25 35 32.28	— 78.21		7.7 magnitude.
50.0	42.8	. . .	14.70	40.79	214 45 54.36	— 73 39 33.61	101.54		
. . .	42.8	. . .	1 13.03	47.18	38 52 2.53	+ 0 1 36.72			
. . .	. . .	. . .	+ 28.16	+ 1 9.24	229 41 38.85	88 35 18.10	91.13		
. . .	. . .	. . .	— 33.32	— 1 9.24	310 18 19.44	88 35 19.81	91.13		Outside middle tally.
49.2	42.3	. . .	+ 31.38	+ 26.51	155 45 6.09	14 38 45.34	83.36		
. . .	. . .	. . .	+ 20.21	34.55	149 34 46.53	8 28 25.78	79.78		
. . .	. . .	. . .	— 25.37	34.56	30 25 11.59	8 28 27.66	79.78		
. . .	. . .	. . .	— 21.30	+ 20.00	18 44 59.92	20 8 39.33	— 79.93		″
. . .	. . .	. . .	+ 1 38.10	— 1 54.67	297 4 42.22	78 11 2.97	+ 75.36		+ 0.81 applied to mean of A, B, E, F.
48.2	41.2	. . .	+ 1 19.39	+ 2 4.58	244 48 26.45	76 17 54.30	+ 69.59		
. . .	. . .	. . .	— 40.54	+ 23.83	21 59 45.57	16 53 53.68	— 66.23		
. . .	. . .	. . .	+ 38.19	— 23.83	158 0 14.29	16 53 53.54	— 66.23		
54.0	50.9	29.8476	— 1 39.18	— 57 21.76	37 41 59.58	+ 1 11 39.67		Ha.	
. . .	. . .	29.8455	+ 2 53.22	+ 42.82	42 48 36.92	— 3 54 41.21		N.	
51.2	31.5	. . .	+ 2 21.72	42.81	42 48 5.40				
. . .	. . .	. . .	— 1 26.69	1 23.96	58 20 0.40	19 42 34.39			
54.2	63.5	. . .	+ 58.59	1 25.88	58 52 26.87				
. . .	. . .	. . .	— 25.60	47.05	43 30 31.23	4 36 35.37			
42.1	38.2	. . .	— 57.36	47.03	43 29 59.45				
. . .	.	. . .	+ 3.86	+ 1 34.14	59 31 40.55	— 20 21 47.99			Both limbs excessively blurred.

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
6–7	Sun	16 11.66
13–14		16 14.00
30–31		16 12.61
54–55		16 13.24
60–61		16 13.31
2–3	Venus	17.78
52–53		16.46
57–58		16.61

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.	
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.
	1	Sun N. L.	4	VI-IX.	58 59 56.1	65.2	62.8	63.4	65.0	58.6	61.85	34.2652	.3090
Nov. 24	2	Venus S. L.	2	VI-VIII.	43 59 57.8	64.5	61.6	62.1	64.2	58.9	61.52	30.2555	.2896
	3	Venus N. C.	2	VII-IX.	" " "	"	"	"	"	"	"	31.1815	.2253
	4	Nadir 15h. 55m.	3	. .	179 59 57.7	64.4	62.9	61.5	62.9	56.8	61.03	29.8824	.8818
25	5	Sun N. L.	4	I-IV.	59 19 55.9	64.5	61.8	60.9	65.5	59.6	61.37	26.1735	.1725
	6	Sun S. L.	4	VI-IX.	59 54 55.8	64.0	61.1	60.7	63.9	58.2	60.62	31.0385	.0767
26	7	Polaris	5	V.	310 19 57.3	66.2	64.1	61.7	63.1	53.2	60.93	30.8302	.8245
	8	Nadir 2h. 0m.	3	. .	179 59 56.9	65.9	64.4	63.9	61.0	52.3	60.73d	29.8505	.8499
	9	15 Orionis	5	III-VII.	23 29 57.0	69.0	64.5	68.0	64.2	55.0	62.95	33.8026	.7931
	10	κ Tauri	5	III-VII.	16 59 57.8	69.9	66.4	69.2	64.6	55.0	63.82	37.2054	.2149
	11	115 Tauri	5	III-VII.	21 4 58.1	70.0	65.0	69.1	65.7	56.2	64.02	34.2112	.2212
	12	Uranus	5	III-VII.	15 29 55.2	67.0	62.2	64.2	60.5	51.2	60.05	36.1504	.1586
	13	129 Tauri	5	III-VII.	23 9 55.0	66.9	62.0	65.3	62.6	52.8	60.77	35.0652	.0715
	14	Moon N. C.	5	III-VII.	17 59 53.2	65.5	61.3	64.0	60.6	50.1	59.12	25.8470	.8396
	15	1 Geminorum	5	III-VII.	15 39 53.8	65.2	61.0	62.7	60.4	50.5	58.93	34.7974	.7863
	16	η Geminorum	5	III-VII.	16 19 53.0	64.1	61.1	61.6	59.9	49.2	58.15	28.1302	.1380
	17	μ Geminorum	3	IV-VI.	" " "	"	"	"	"	"	"	32.3827	.3863
	18	δ Ursæ Minoris, S. P.	3	3-1.	305 29 55.9	64.1	61.8	62.1	61.1	50.5	59.25	26.8420	.8384
	19	Nadir 6h. 26m.	3	. .	179 59 55.5	66.0	63.0	65.0	59.8	51.2	60.08d	29.8178	.8183
	20	Venus S. L	5	I-IX.	44 29 54.5	64.1	61.3	63.9	60.0	52.2	59.33	27.2522	.2669
	21	Venus N. C.	4	II-VIII.	" " "	"	"	"	"	"	"	28.1372	.1501
	22	Nadir 16h. 0m.	3	. .	179 59 55.6	65.3	63.7	63.9	60.9	53.5	60.48	29.8515	.8511
27	23	Sun S. L.	4	I-IV.	60 14 54.2	63.4	61.4	62.7	62.2	54.7	59.77	25.9920	.9844
	24	Sun N. L.	4	VI-IX.	59 44 53.6	63.7	61.1	62.2	62.2	55.1	59.65	30.5500	.5703
	25	ι Cephei (Ref.)	3	II-IV.	206 34 56.9	61.6	61.3	60.0	60.2	54.9	59.15	29.0253	.0560
	26	ι Cephei	4	VI-IX.	333 24 56.5	63.6	63.3	60.2	64.5	54.8	60.48	30.7022	.6487
	27	γ Piscium (Ref.)	3	I-III.	143 39 57.0	65.0	62.4	61.5	64.5	55.6	61.00	30.6642	.6370
	28	γ Piscium	4	VI-IX.	36 19 58.0	65.7	64.4	63.4	66.3	56.3	62.35	29.1890	.2128
	29	θ Piscium	5	III-VII.	33 19 57.0	65.9	63.3	63.5	66.0	56.6	62.05	39.7400	.7279
	30	B. A. C. 8213	3	3-5.	312 19 57.2	62.5	62.7	58.5	63.0	53.2	59.52	28.0737	.0816
	31	τ Cassiopeæ	4	I-IV.	340 59 57.6	65.8	65.4	63.1	65.1	55.8	62.13	30.0528	.0096
	32	Nadir	3	. .	179 59 57.5	65.0	63.7	62.2	63.6	55.0	61.17	29.8937	.8922
29	33	Venus S. L.	5	I-IX.	45 19 55.6	62.8	61.9	61.2	61.1	54.5	59.52	27.5908	.5808
	34	Venus N. C.	4	II-VIII.	" " "	"	"	"	"	"	"	28.4818	.4788
30	35	Sun N. L.	4	I-IV.	60 14 56.6	68.1	64.0	68.4	63.9	56.8	62.97	28.8930	.8807
	36	Sun S. L.	4	VI-IX.	60 49 56.0	68.0	63.6	68.1	63.0	56.0	62.45	33.6578	.6741
	37	Nadir 22h. 40m.	4	. .	179 59 55.0	68.3	64.8	68.0	60.3	51.1	61.25	29.9118	.9112
	38	Lacaille 9411	5	III-VII.	64 29 55.2	67.2	64.5	68.6	61.6	52.1	61.53	35.6624	.6522
	39	O. S. 22779	3	IV-VI.	" " "	"	"	"	"	"	"	32.6927	.6809
	40	O. S. 22851	1	V.	54 54 54.4	65.9	62.8	66.9	61.3	50.3	60.27	29.9710	.9745
	41	Lacaille 9567	3	IV-VI.	76 24 54.5	66.6	64.1	67.1	62.3	50.8	60.90	35.8733	.8729
	42	O. S. 23052	1	V.	56 19 54.2	65.9	63.2	67.0	62.2	53.0	60.92	31.3770	.3823
	43	O. S. 23124-5	1	V.	57 29 53.2	65.6	62.2	65.4	60.4	51.6	59.73	35.3620	.3685
	44	B. A. C. 8360	3	IV-VI.	56 9 53.9	65.0	62.8	67.0	62.5	52.4	60.60	31.6377	.6249
	45	O. S. 122	5	III-VII.	57 19	70.1	66.9	70.7	66.3	56.7	64.84	31.3140	.3266
	46	Anon. 0h. 27m. 0s.	1	V.	78 14 53.6	67.6	63.9	66.9	62.8	51.4	61.03	30.0320	.0387
	47	β Ceti	5	III-VII.	57 34	66.7	63.1	67.9	62.8	53.1	61.41	28.0008	.0085
	48	Lacaille 220	3	IV-VI.	68 4 53.4	65.7	62.4	66.3	61.4	51.7	60.15	29.3180	.3294
	49	O. S. 569	1	V.	65 19 52.9	64.3	61.7	65.7	60.3	48.9	58.97	29.2650	.2771
	50	O. S. 704	1	V.	63 54 54.4	66.4	63.0	68.2	61.2	51.2	60.73	33.9920	.9967
	51	Nadir 1h. 20m.	3	. .	179 59 55.5	68.9	65.1	68.6	60.3	50.7	61.52	29.9212	.9204
Dec. 1	52	Sun S. L.	4	I-IV.	60 54 56.1	68.5	63.0	68.0	64.5	55.6	62.62	25.0448	.0413
	53	Sun N. L.	4	VI-IX.	60 24 54.6	66.7	61.7	65.9	63.2	54.7	61.13	29.7540	.7736
	54	Nadir 16h. 40m.	3	. .	179 59 56.2	67.0	63.8	65.9	62.2	53.3	61.40	29.9558	.9553
	55	Nadir 22h. 45m.	3	. .	179 59 56.2	65.6	62.8	63.0	63.2	52.8	60.60	29.9133	.9127
	56	β Ursæ Majoris, S. P.	5	VII-III.	276 9 55.6	62.7	60.2	61.5	63.1	52.8	59.32	32.5710	.5708
	57	O. S. 22688	5	III-VII.	56 29 55.6	64.3	61.9	63.6	65.2	55.9	61.08	28.0044	.0121
	58	Anon. 23h. 12m. 26s.	1	V.	77 59 56.1	66.5	63.6	64.2	67.1	56.0	62.25	29.3490	.3566
	59	Anon. 23h. 13m. 13s.	1	V.	" " "	"	"	"	"	"	"	23.4410	.4403
	60	Lacaille 9489	5	III-VII.	64 59 56.4	64.6	62.4	62.8	64.7	54.2	60.85	26.8500	.8494

THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
48.8	43.8	29.8455	— 2 19.94	+ 1 32.02	58 59 13.93	— 20 21 47.99			
. .	. .	. .	13.93	46.51	44 0 34.10	5 6 39.52			
49.5	43.9	. . .	— 43.26	46.49	44 0 4.75				
. .	. .	. . .	+ 1 55.16	1 31.00	59 23 27.53	— 20 46 2.08			
50.8	47.1	. . .	— 38.60	+ 1 33.12	59 55 55.14				
42.5	33.8	29.8266	31.29	— 1 11.62	310 18 18.02	+ 88 35 21.23	— 93.92	Ha.	All at wire V.
38.0	30.4	29.8187	2 4.70	+ 26.62	23 28 24.87	15 25 14.38	18.29		
. .	. .	. . .	3 51.99	18.67	16 56 30.50	21 57 8.75	14.21		
. .	. .	. . .	2 18.13	23.59	21 3 9.48	17 50 29.77	11.39		
39.0	30.5	. . .	3 18.88	16.81	15 26 57.98	23 26 41.27			
. .	. .	. . .	— 2 44.79	+ 26.17	23 7 42.15	15 45 57.10	— 3.94		
. .	. .	. . .	+ 2 4.66	— 1 30.08	18 0 33.70	20 53 5.55			
39.5	30.6	. . .	— 2 35.84	+ 17.14	15 37 40.23	23 15 59.02	+ 3.73		
. .	. .	. . .	+ 52.59	17.98	16 21 8.72	22 32 30.53	7.90		
. .	. .	. . .	— 1 20 59	+ 17.94	16 18 55.50	22 34 43.75	+ 11.08		
39.5	30.5	29.8157	+ 1 33.34	— 1 25.68	305 30 6.91	+ 86 36 27.66	— 20.49		A very bad night; not fit to observe.
. .	. .	29.8455	1 20.85	+ 49.80	44 32 9.98	— 5 38 16.25		N.	
36.6	32.8	. . .	53 15	49.79	44 31 42.27				Faint. The cusp uncertain.
. .	.	. . .	+ 2 1.05	1 36.01	60 18 36.83	21 18 44.55			
43.0	46.7	. . .	— 22.72	1 33.84	59 46 10.77				
. .	. .	. . .	+ 24.76	+ 30.04	206 35 53.95	65 29 33.20	100.79		
44.8	39.3	. . .	— 25.18	— 30.04	333 24 5.26	— 65 29 33.99	100.79		
. .	38.7	. . .	— 24.82	— 44.19	143 38 51.99	+ 2 32 31.24	87.28		
. .	. .	. . .	+ 19.84	+ 44.19	36 21 6.38	2 32 32.87	87.28		
. .	. .	. . .	— 5 9.85	+ 39.39	33 15 31.59	5 38 7.66	88.81		
. .	. .	. . .	+ 55.30	— 1 5.86	312 19 48.96	86 33 50.29	103.38		
44.0	38.4	. . .	— 5.15	— 20.70	340 59 36.28	+ 57 54 2.97	102.01		
39.4	28.7	29.8716	— 1 11 83	+ 52.07	45 22 3.42	— 6 28 9.45			
. .	. .	. . .	+ 43 67	52.06	45 21 35.25				Good.
. .	. .	. . .	+ 31.07	1 39.22	60 17 13.26	21 39 49.77			Nadir not observable owing to high wind.
36.6	30.2	. . .	— 1 59.22	1 41.55	60 49 44.78				Both limbs very undulating. Extremely unsteady.
27.9	23.0	. . .	3 1.24	2 9.86	64 29 10.15	25 35 10.90	77.17		
. .	. .	. . .	1 28.08	2 10.14	64 30 43.29	25 37 4.24	77.60		
. .	. .	. . .	3.23	1 28.64	54 56 25.68	16 2 46.43	81.14		
28.0	22.7	. . .	3 8.16	4 12.75	76 26 5.49	37 32 26.24	74.57		Microscope D was recorded 57″.1.
. .	. .	. . .	47.36	1 33.48	56 20 47.04	17 27 7.79	81.24		
. .	. .	. . .	2 52.34	1 37.60	57 28 44.99	18 35 5.74	80.93		
. .	22.5	. . .	54.96	1 32.94	56 10 38.58	17 16 59.33	81.32		[scopes. Recorded 57° 14′.
. .	22.0	. . .	45.61	1 37.30	57 20 56.53	18 27 17.28	80.61		—0. 31 applied to mean of last four micro-
. .	. .	. . .	— 5.23	4 53.71	78 19 49.51	39 26 10.26	73.70		
28.3	21.8	. . .	+ 58.40	1 38.37	57 37 38.18	18 43 58.93	79.29		—0″.31 applied to mean of last 4 microscopes.
. .	. .	. . .	17.01	2 34.58	68 7 51.74	29 14 12.49	75.79		Magnitude 8.0.
. .	21.7	. . .	+ 18.65	2 15.63	65 22 33.25	26 28 54.00	75.65		
28.3	21.8	. . .	— 2 9.32	2 7.07	63 54 58.48	25 1 19.23	— 74.72		Magnitude 9.5.
. .	. .	. . .	+ 2 32.66	1 42.11	60 59 17.39	— 21.49 22.04			
33.1	34.5	. . .	+ 4.29	+ 1 39.77	60 26 45.19				
36.5	31.0	. . .	— 1 23.94	— 8 39.17	275 59 56.21	+ 57 6 16.96	+ 97.60		
. .	. .	. . .	+ 58.99	+ 1 32.53	56 32 32.60	— 17 38 53.35	— 79.54		
. .	. .	. . .	16.84	4 42.05	78 5 1.14	39 11 21.89	72.93		Faint and uncertain.
. .	31.0	. . .	3 22.34	4 43.24	78 8 7.83	39 14 28.58	72.98		Faint and uncertain.
. .	30.9	. . .	1 35.45	+ 2 11.11	65 3 47.41	— 26 10 8.16	— 77.61		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
5–6 23–24 35–36 52–53	Sun	16′ 13″.80 16 13.03 16 15.76 16 16.10
2–3 20–21 33–34	Venus	15.33 14.48 14.72

OBSERVATIONS WITH THE MURAL CIRCLE.

Number.		OBJECT.	No. of mic. readings.	Transit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
					° ' "				"	"	"	r.	r.	in.
1	γ	Cephei	2	III. IV.	321 59 55.1	62.8	61.5	59.4	61.8	51.6	58.70	26.7915	.7306	. .
2	γ	Cephei, (Ref.)	3	VI. VII.	217 59 57.8	66.4	64.0	65.3	65.3	59.4	63.03	33.0813	.1261	. .
3	α	Andromedæ, (Ref.)	3	I-V.	169 24 57.4	66.4	64.2	65.3	64.8	53.7	61.97	25.8087	.8129	. .
4	α	Andromedæ	1	IX.	10 34 56.5	67.1	63.2	65.0	65.8	53.8	61.90	34.0850	.0679	. .
5		Neptune	5	I-IX.	38 54 55.5	66.4	62.9	63.9	67.2	55.1	61.92	31.6782	6647	. .
6	α	Cassiopeæ, (Ref.)	2	I. IV.	196 54 55.4	64.6	61.2	64.0	61.5	54.2	60.15	32.1315	.1687	. .
7	α	Cassiopeæ	4	VI-IX.	343 4 55.1	62.8	61.9	58.9	62.6	52.3	58.93	27.6565	.6196	. .
8		Lacaille 277	1	V.	78 29 56.4	66.9	64.6	63.9	67.5	56.4	62.62	33.8870	.8853	30.353
9		Venus S. L.	2	VI, VIII.	45 54 56.2	65.4	62.6	62.6	65.6	54.5	61.15	28.2045	.2385	. .
10		Venus N. C.	2	VII, IX.	" " "	"	"	"	"	"	"	29.0780	.1243	. .
11	α	Draconis	1	V.	323 49 58.8	66.5	65.3	62.0	66.1	54.8	62.25	24.7450	.7339	30.154
12	β	Ursæ Minoris	5	IV, VI.	224 9 55.8	63.5	62.5	58.5	64.7	53.0	59.67	26.4004	.3761	30.143
13		Sun N. L.	4	I-IV.	60 34 56.1	65.5	60.3	61.8	66.6	59.5	61.63	31.2452	.2472	. .
14		Sun S. L.	4	VI-IX	61 4 53.8	63.4	57.9	60.1	63.4	56.4	59.17	26.5310	.5516	30.097
15		Nadir 18h. 40m.	3	. .	179 59 57.6	63.8	60.0	59.5	62.6	56.8	60.65	29.8816	.8808	
16		Nadir 16h. 30m.	2	. .	179 59 57.8	64.3	62.8	59.1	64.0	57.1	60.85	29.9160	.9153	
17		Sun S. L.	4	I-IV.	61 14 57.3	65.0	61.7	61.5	65.4	60.1	62.00	29.1508	.1526	. .
18		Sun N. L.	4	VI-IX.	60 44 56.3	64.4	60.6	59.8	66.1	58.8	61.00	33.8015	.8233	30.417
19	α	Lyræ	5	I-IX.	0 14 59.1	67.0	64.1	61.6	67.0	58.6	62.90	32.1262	.1169	. .
20		Nadir 22h. 45m.	3	. .	179 59 57.6	64.7	63.0	59.7	64.4	56.8	61.03	29.9144	.9137	
21	ο	Cephei, (Ref.)	4	I-IV.	208 29 57.2	63.5	63.0	60.4	65.2	59.9	61.53	33.1565	.2134	. .
22	ο	Cephei	4	VI-IX.	331 29 57.3	63.5	62.8	58.8	65.3	56.7	60.73	26.7152	.6571	30.365
23	λ	Draconis S. P.	5	VII-III.	288 59 56.9	62.2	59.5	56.1	63.9	54.1	58.78	27.9044	.9247	. .
24	ι	Piscium, (Ref.)	3	I-III.	145 59 56.9	64.8	61.1	59.6	66.3	56.8	60.92	28.9137	.9016	. .
25	ι	Piscium	4	VI-IX.	33 59 55.4	63.4	60.9	59.6	64.9	56.9	60.18	30.9572	.9703	. .
26	τ	Cassiopeæ, (Ref.)	3	VII-IX.	198 59 55.1	62.3	61.3	57.5	61.2	53.0	58.57	30.0000	.0951	. .
27	γ	Ursæ Majoris S. P.	5	VII-III.	273 34 57.0	63.1	61.0	57.5	64.9	56.5	60.00	32.7194	.7176	30.356
28		Anon. 23h. 53m. 34s.	3	IV-VI.	65 14 57.4	64.8	62.2	60.8	67.5	59.0	61.95	31.3520	.3609	. .
29		B. A. C. 8360	5	I-IX.	56 9 57.6	64.6	62.5	62.0	67.4	59.4	62.25	31.5320	.5305	. .
30	4	Draconis S. P., (Ref.)	4	VI-IX.	242 39 57.0	62.8	60.9	57.9	64.3	57.5	60.07	25.3022	.1835	. .
31		Neptune	5	III-VII.	38 54 56.3	64.4	62.5	59.5	67.5	58.2	61.40	31.1084	.1185	. .
32	α	Cassiopeæ	4	I-IV.	343 4 56.0	62.1	62.0	56.4	64.3	55.1	59.32	37.7038	.6430	. .
33		Lacaille 234	1	V.	78 9 56.5	66.6	63.0	60.9	67.1	58.1	62.03	39.0800	.0890	30.346
34		B. A. C. 4342, S. P.	5	5-1.	303 4 56.2	60.4	60.6	56.1	61.5	54.1	58.15	31.7844	.7768	. .
35		O. S. 569	1	V.	65 24 57.3	63.6	61.5	61.0	66.1	57.9	61.23	38.7480	.7371	. .
36		O. S. 613-614	1	V.	67 54 58.8	65.9	64.1	62.1	67.0	60.7	63.10	31.3420	.3501	. .
37		Polaris, (Ref.)	3	2, 4, 5.	229 29 57.6	63.4	62.0	60.3	64.7	60.4	61.40	28.8750	.8766	. .
38	ζ	Ursæ Majoris S. P.	5	VII-III.	274 44 58.1	63.9	63.0	61.3	64.8	58.5	61.60	35.1972	.2208	30.341
39	ν	Piscium	3	I-III.	34 4 35.5	62.9	60.9	58.9	64.0	56.0	59.70	29.9743	.9508	. .
40	ν	Piscium, (Ref.)	2	VI, IX.	145 54 53.2	62.1	58.1	56.4	62.3	54.0	57.68	29.7750	.7804	. .
41	β	Arietis, (Ref.)	4	I-IV.	161 14 57.8	64.5	63.9	60.1	64.7	56.5	61.25	29.2488	.2574	. .
42	β	Arietis	4	VI-IX.	18 44 58.7	65.5	63.8	61.8	67.1	57.4	62.38	30.6480	.6378	. .
43	α	Draconis S. P.	5	VII-III.	283 59 57.1	64.0	62.3	59.4	64.4	55.9	60.52	31.8532	.8654	. .
44	ι	Cassiopeæ, (Ref.)	5	III-VII.	207 49 56.1	60.3	60.4	57.4	61.4	55.6	58.53	23.4568	.4721	. .
45	5	Ursæ Minoris S. P.	3	VII, V, IV.	295 14 56.0	61.5	59.0	56.3	63.1	53.1	58.17	32.4820	.5050	30.326
46	η	Persei, (Ref.)	4	I-IV.	196 24 57.4	64.4	60.9	60.9	62.6	55.8	60.33	28.1212	.1541	. .
47	η	Persei	1	IX.	343 34 57.0	64.3	63.8	59.4	65.2	56.6	61.05	31.7480	.6860	. .
48		Nadir 2h. 55m.	3	. .	179 59 55.0	63.2	60.8	58.6	62.0	53.5	58.85	29.8438	.8431	
49		Venus S. L.	5	I-IX.	46 29 56.7	65.4	63.0	63.3	65.8	55.9	61.68	27.0926	.1054	. .
50		Venus N. C.	4	IV-VIII.	" " "	"	"	"	"	"	"	27.9990	.0063	30.219
51		Nadir	3	. .	179 59 56.3	64.7	62.5	61.6	62.4	55.0	60.42	29.9046	.9038	
52		Sun N. L.	4	I-IV.	60 49 55.5	65.0	61.8	62.1	65.2	58.2	61.30	27.6498	.6265	. .
53		Sun S. L.	4	VI-IX.	61 24 55.2	64.4	60.3	60.1	64.2	56.3	60.08	32.3525	.3889	. .
54		Neptune	2	III, VII.	38 54 55.1	62.1	60.0	58.0	66.4	58.1	59.95	30.8185	.8120	30.112
55		Nadir 23h. 45m.	3	. .	179 59 58.7	65.4	64.1	60.6	65.1	56.6	61.75	29.9502	.9496	. .
56	ω	Piscium	5	III-VII.	32 44 57.8	66.4	63.0	62.1	67.4	59.1	62.63	27.6462	.6315	. .
57		B. A. C. 8360	5	III-VII.	56 9 57.5	63.4	61.4	62.0	66.0	59.0	61.55	31.4564	.4565	30.140
58		Neptune	5	I-IX.	38 54 58.5	66.0	63.5	62.8	68.0	59.9	63.12	30.7860	.7774	. .
59	α	Cassiopeæ	3	I, II, IV.	343 4 56.8	63.4	63.3	58.1	65.0	55.9	60.42	27.7820	.7193	. .
60	α	Cassiopeæ, (Ref.)	4	VI-IX.	196 54 56.2	63.5	60.9	60.9	62.6	55.7	59.97	31.9980	.0511	. .
61		O. S. 433	1	V.	68 4 54.6	62.5	60.9	60.0	63.6	57.0	59.77	29.0540	.0618	30.140

THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
. .	. .	29.8936	+ 1 39.16	— 47.87	322 0 49.99	+ 76 52 49.26	+ 104.12	N.	
. .	. .	. . . .	— 1 41.35	+ 47.87	217 59 9.55	76 52 48.80	— 104.12		First reading at H. A. 0m. 41s.
. .	. .	. . . .	+ 2 7.94	— 11.42	169 26 58.49	28 20 37.74	95.70		
. .	31.0	. . . .	— 2 10.87	+ 11.42	10 33 2.45	+ 28 20 36.80	95.70		
. .	31.0	. . . .	55.53	49.29	38 54 55.68	— 0 1 16.43			
. .	. .	. . . .	— 1 11.33	+ 18.64	196 54 7.46	+ 55 47 46.71	99.00		
. .	. .	. . . .	+ 1 11.30	— 18.64	343 5 51.59	+ 55 47 47.66	99.00		
36.0	30.4	. . . .	— 2 5.15	+ 4 52.94	78 32 50.41	— 39 39 11.16	— 71.79		
. .	. .	29.8792	+ 51.43	52.41	45 56 44.99	— 7 2 51.25			
. .	. .	. . . .	23.67	+ 52.41	45 56 17.23				
37.2	38.8	. . . .	2 41.32	— 29.40	333 52 14.17	+ 65 1 25.08	+ 81.01		Good.
39.0	46.1	. . . .	+ 1 49.83	— 42.59	224 11 6.91	+ 74 42 32.34	+ 66.80		Also at wires 1-5.
. .	. .	. . . .	— 42.89	+ 1 35.38	60 35 54.12	— 21 58 28.37			
42.5	52.1	. . . .	+ 1 44.33	1 37.63	61 8 21.13				Limbs ill-defined.
. .	. .	. . . .	+ 23.07	1 40.30	61 17 5.37	— 22 7 11.23			
46.3	47.5	. . . .	— 2 3.38	1 37.98	60 44 35.60				
. .	49.0	. . . .	1 9.88	0.24	0 13 53.26	+ 38 39 45.99	— 24.61		
. .	. .	29.8803	— 1 44.49	+ 32.58	208 28 49.62	67 22 28.87	103.19		
45.8	41.0	. . .	+ 1 41.06	— 32.58	331 31 9.21	67 22 30.04	— 103.19		
. .	40.8	. . . .	1 1.31	2 52.80	288 58 7.29	70 4 28.04	+ 102.01		
. .	. .	. . . .	+ 30.68	— 40.55	145 59 51.05	4 53 30.30	— 88.56		
. .	. .	. . . .	— 34.17	+ 40.55	34 0 6.56	4 53 32.69	88.56		
. .	. .	. . . .	6.74	+ 20.72	199 0 12.55	57 53 51.80	— 102.55		
46.0	39.9	. . . .	1 28.96	— 13 14.58	273 20 16.46	+ 54 26 37.21	+ 98.93		
. .	. .	. . . .	46.42	+ 2 9.87	65 16 25.40	— 26 22 46.15	— 77.98		
. .	. .	. . . .	— 51.74	1 29.60	56 10 40.11	— 17 17 0.86	— 80.97		
. .	39.3	. . . .	+ 2 27.26	1 56.30	242 44 23.63	+ 78 21 57.12	+ 102.37		
. .	. .	. . . .	— 38.82	+ 48.44	38 55 11.02	— 0 1 31.77			
. .	. .	. . . .	+ 1 10.15	— 18.32	343 5 51.15	+ 55 47 48.10	— 99.21		
. .	38.5	. . . .	— 4 48.72	+ 4 39.18	78 9 52.49	— 39 16 13.24	— 72.28		Magnitude 8.5.
. .	. .	. . . .	59.46	— 1 32.45	303 2 26.24	+ 84 8 46.99	+ 98.64		
. .	. .	. . . .	4 37.69	+ 2 10.76	65 22 34.30	— 26 28 55.05	— 75.18		Magnitude 7.2.
. .	38.5	. . . .	— 46.08	2 27.68	67 56 44.70	— 29 3 5.45	73.99		Magnitude 9.0:
. .	. .	. . . .	+ 31.46	+ 1 11.04	229 41 43.90	+ 88 35 23.15	— 95.43		
44.8	38.2	. . . .	— 2 47.45	— 10 47.20	274 31 26.95	55 37 47.70	+ 89.52		
. .	. .	. . . .	— 2.53	+ 40.87	34 5 38.04	4 48 1.21	— 78.92		
. .	. .	. . . .	+ 3.13	— 40.87	145 54 19.94	4 47 59.19	78.92		
. .	. .	. . . .	+ 19.53	— 20.52	161 15 0.26	20 8 39.51	80.25		
. .	37.5	. . . .	— 23.76	+ 20.52	18 44 59.14	20 8 40.11	— 80.25		
. .	. .	. . . .	— 1 2.23	— 3 58.50	283 54 59.79	65 1 20.54	+ 81.50		
. .	. .	. . . .	+ 3 20.92	+ 31.99	207 53 51.44	66 47 30.69	— 78.99		Uncertain; tremulous and blurred.
44.0	37.3	. . . .	— 1 22.29	— 2 7.70	295 11 28.18	76 17 48.93	+ 75.02		
. .	. .	. . . .	+ 54.12	+ 17.84	196 26 12.29	55 19 51.54	— 71.35		
. .	. .	. . . .	— 56.61	— 17.84	343 33 46.60	+ 55 19 52.65	71.35		Very unsteady.
39.8	37.0	29.8904	+ 1 27.33	+ 53.85	46 32 22.86	— 7 38 28.86			
. .	. .	. . . .	59.07	53.84	46 31 54.59				
. .	. .	. . . .	+ 1 10.98	1 37.67	60 52 49.95	22 15 26.59			
44.2	47.6	. . . .	— 1 18.34	1 39.99	61 25 21.73				
49.3	47.0	. . . .	— 28.89	47.30	38 55 18.36	— 0 1 39.11			
. .	42.0	. . . .	+ 1 10.93	37.40	32 46 50.96	+ 6 6 48.29	88.85		
47.4	42.0	. . . .	— 48.99	1 28.51	56 10 41.07	— 17 17 1.82	80.73		Magnitude 6.7.
. .	. .	. . . .	— 27.70	+ 47.95	38 55 23.37	— 0 1 44.12			
. .	. .	. . . .	+ 1 8.18	— 18.18	343 5 50.42	+ 55 47 48.83	99.36		
. .	. .	. . . .	— 1 7.64	+ 18.18	196 54 10.51	+ 55 47 49.76	99.36		Both direct and reflected image blurred and very unsteady.
46.0	38.8	. . . .	+ 26.08	+ 2 27.90	68 7 53.75	— 29 14 14.50	— 74.98		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
13–14	Sun	16 13.50
17–18		16 14.88
52–53		16 15.89
9–10	Venus	14.49
49–50		14.75

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES.							MICROMETER.		Barometer.
					A.	B.	C.	D.	E.	F.	Mean.	Observed.	Correc'd.	
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 6	1	Venus S. L.	3	IV-VIII.	47 24 56.3	65.5	62.5	66.3	62.2	52.9	60.95	27.2477	.2725	30.679
	2	Venus N. C.	3	V-IX.	" " "	"	"	"	"	"	"	28.1317	.1660	. .
	3	Nadir 16h. 40m.	3	. .	179 59 55.5	67.2	64.0	66.2	60.8	51.4	60.85	29.8760	.8753	
7	4	Sun S. L.	4	I-IV.	61 44 55.2	67.5	63.2	65.9	63.6	53.6	61.50	28.4030	.3978	. .
	5	Sun N. L.	4	VI-IX.	61 14 54.6	66.6	62.9	66.0	62.9	53.8	61.13	33.0925	.1301	30.666
	6	Anon. 22h. 59m. 48s.	1	V.	74 24 57.0	66.8	64.3	66.3	65.4	55.0	62.47	27.7790	.7700	30.604
	7	O. S. 22723	1	V.	60 49 54.5	63.8	61.7	62.9	63.2	53.1	59.87	32.9670	.9638	. .
	8	Lacaille 9489	3	IV-VI.	65 4 55.4	63.4	61.4	63.4	63.2	52.1	59.82	36.4090	.4064	. .
	9	γ Ursæ Majoris S. P.	4	IV-I.	273 34 55.0	63.4	61.1	60.8	62.0	50.9	58.87	31.4896	.5303	. .
	10	α Andromedæ (Ref.)	3	I, III, V.	169 24 55.1	63.8	62.4	63.5	61.1	49.9	59.30	25.6973	.6848	. .
	11	α Andromedæ	2	VIII-IX.	10 34 55.0	66.0	62.9	65.2	63.5	52.0	60.77	34.0430	.0463	. .
	12	δ Ursæ Majoris S. P.	5	VII-III.	276 49 59.9	67.6	65.0	66.1	66.5	56.5	63.60	32.3572	.3761	30.594
	13	Neptune	1	V.	38 54 57.5	67.4	65.5	66.3	67.6	57.0	63.55	30.2780	.2898	. .
	14	Anon. 0h. 27m. 0s.	1	V.	78 14 55.9	66.7	64.5	65.6	65.4	54.9	62.17	29.9270	.9278	. .
	15	Lacaille 290	5	III-VII.	71 39 55.9	66.1	63.5	65.5	64.2	54.8	61.67	31.3712	.3818	30.589
	16	O. S. 818-9	5	III-VII.	68 4 55.5	66.2	63.2	65.5	64.8	55.5	61.78	32.3062	.3208	. .
	17	Lacaille 444	5	III-VII.	63 44 55.5	65.8	61.8	64.9	64.0	54.0	61.00	32.0114	.0205	. .
	18	Nadir 1h. 35m.	3	. .	179 59 55.7	65.4	63.5	65.4	61.2	51.9	60.51*d*	29.8722	.8714	
	19	Anon. 1h. 39m. 47s.	1	VII.	75 39 53.3	64.5	62.0	64.0	62.5	51.0	59.55	35.1050	.1365	30.574
	20	O. S. 1127	1	V.	55 14 53.9	64.4	62.4	64.4	64.3	52.1	60.25	36.6380	.6242	. .
	21	O. S. 1189	5	III-VII.	57 14 54.6	65.9	62.9	64.8	64.7	54.6	61.25	34.5252	.5190	. .
8	22	Sun N. L.	4	I-IV.	61 24 54.6	67.4	62.0	65.8	64.0	54.0	61.30	39.8470	.8354	30.366
	23	Sun S. L.	4	VI-IX.	61 54 53.8	66.7	60.6	65.0	63.0	52.0	60.18	34.9822	.0137	. .
	24	Nadir 18h. 25m.	4	. .	179 59 53.0	64.0	59.8	60.6	59.7	49.0	57.68	29.7801	.7804	
	25	α Lyræ	5	III-VII.	0 14 53.0	63.3	60.1	60.9	61.2	49.0	57.92	31.8884	.8807	30.330
	26	Lacaille 9482	5	III-VII.	66 59 56.6	66.1	63.2	64.0	66.3	56.9	62.18	43.4124	.4186	30.260
	27	Lacaille 9508	5	III-VII.	65 24 56.1	65.9	61.5	64.0	67.2	56.0	61.78	37.1694	.1852	. .
	28	Lacaille 9532	5	III-VII.	64 54 56.2	65.7	62.2	63.6	66.4	55.1	61.53	37.5092	.5056	. .
	29	Lacaille 9576	5	III-VII.	73 9 57.3	66.7	62.6	65.3	67.0	55.5	62.40	46.4656	.4676	30.260
	30	Lacaille 9605	5	III-VII.	67 34 58.5	68.8	65.1	66.7	69.1	59.6	64.63	43.8170	.8145	. .
	31	B. A. C. 8308	5	III-VII.	66 44 59.0	68.8	65.7	65.9	68.6	59.4	64.57	40.8196	.8172	. .
	32	Lacaille 9680	5	III-VII.	64 19 59.4	69.3	65.5	66.9	69.0	58.2	64.72	38.1862	.2021	. .
	33	α Andromedæ (Ref.)	3	II, IV, V.	169 24 60.0	68.8	66.6	67.5	67.1	56.8	64.47	25.8497	.8445	. .
	34	α Andromedæ	2	VII & IX.	10 34 60.1	71.8	67.5	68.0	70.2	59.0	66.10	34.1900	.1987	30.250
	35	Neptune	5	III-VII.	38 54 61.0	70.2	67.5	68.1	72.0	60.9	66.62	30.4852	.4801	. .
	36	Nadir 0h. 24m.	3	. .	179 59 54.6	64.5	61.1	60.5	62.0	51.1	58.97*d*	29.8438	.8439	
	37	α Cassiopeæ (Ref)	4	I-IV.	196 54 54.1	64.0	59.9	62.5	61.1	52.9	59.08	32.0515	.0822	. .
	38	α Cassiopeæ	4	VI-IX.	343 4 55.5	63.7	62.5	59.3	64.0	53.0	59.67	27.6680	.6313	. .
	39	B. A. C. 4339 S. P.	1	IV.	303 4 56.5	65.1	61.8	60.0	64.7	53.1	60.20	31.1990	.2484	. .
	40	B. A. C. 4342 S. P.	1	IV.	" " "	"	"	"	"	"	"	31.7810	.8202	. .
	41	c Piscium	5	III-VII.	33 59 56.7	66.1	63.0	64.0	65.4	56.3	61.92	35.5352	.5250	30.242
	42	Venus S. L.	1	I.	48 4 55.3	65.7	62.1	64.8	65.4	54.6	61.32	32.3380	.3129	30.093
9	43	Sun N. L.	4	I-IV.	61 24 54.9	67.2	60.4	62.9	67.5	58.3	61.87	28.1095	.1126	. .
	44	Sun S. L.	4	VI-IX.	61 59 54.5	65.1	59.1	61.1	65.9	56.7	60.40	32.8575	.8811	30.082
	45	Nadir 17h. 15m.	3	. .	179 59 55.6	63.4	59.6	59.2	62.8	54.6	59.20	29.8580	.8576	
	46	Nadir 23h. 45m.	3	. .	179 59 56.7	63.2	60.6	57.9	64.5	56.2	59.85	29.8605	.8597	
	47	γ Ursæ Majoris S. P.	3	V, III, I.	273 34 56.7	61.9	58.9	55.8	65.3	55.4	59.00	32.9940	.0182	30.158
	48	β Cassiopeæ	5	III-VII.	340 29 58.0	65.0	62.9	59.0	68.2	57.2	61.72	30.6228	.5969	. .
	49	O. S. 47	1	V.	57 34 58.3	66.2	62.9	61.3	71.0	62.4	63.68	32.4240	.4249	. .
	50	Neptune	3	III-VII.	38 54 55.6	62.9	60.4	58.2	67.6	57.7	60.40	30.2080	.2205	. .
	51	κ Draconis S. P.	5	VII-III.	289 29 58.0	63.9	59.6	56.4	66.4	56.4	60.12	33.0078	.0347	30.168
	52	Lacaille 238	5	I-IX.	63 39 55.5	62.0	57.9	57.6	65.3	55.8	59.02	36.5160	.5203	. .
	53	ε Piscium (Ref.)	1	V.	148 14 57.5	63.2	60.5	58.1	65.9	56.0	60.20	26.9690	.9723	. .
	54	Polaris (Ref.)	3	2-4	229 39 57.1	61.9	60.4	58.0	66.2	60.0	60.60	28.7697	.7614	. .
	55	Polaris	4	6-7	310 19 57.0	63.6	60.6	55.4	65.8	55.6	59.67	30.0162	.9993	30.171
	56	ν Piscium	3	I-III.	34 4 57.5	64.4	61.2	59.9	67.1	58.0	61.35	30.0027	.9905	. .
	57	ν Piscium (Ref.)	4	VI-IX.	145 54 59.1	67.5	62.7	60.6	69.4	60.6	63.32	29.9152	.9298	. .
	58	ε Cassiopeæ	3	III-V.	335 54 57.4	64.4	66.2	56.2	62.9	57.3	60.73	32.0493	.0390	. .
	59	ε Cassiopeæ (Ref.)	4	VI-IX.	204 4 56.5	63.8	59.7	58.3	64.0	57.9	60.03	27.7660	.8162	. .
	60	O. S. 1245	3	IV-VI.	65 9 55.5	62.3	60.0	57.8	66.0	56.8	59.73	31.7333	.7231	30.167
	61	4 Ursæ Min. S. P. (Ref.)	3	VI-V.	242 54 57.4	63.4	61.0	58.4	65.8	58.4	60.73	32.8497	.8406	. .

THERM'S.		Mic. zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
At.	Ex.		Micrometer.	Object.					
°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		
27.7	24.7	29.8516	+ 1 20.87	+ 58.83	47 27 20.65	− 8 33 26.80		N.	
		. . .	52.85	55.82	47 26 52.62				
27.7	24.7								Image faint.
. .	. .	. . .	+ 45.78	1 47.07	61 47 34.15	22 37 39.28			Both limbs very unsteady and much blurred.
32.2	32.1	. . .	− 1 42.80	1 44.58	61 15 2.91				
35.5	28.9	. . .	+ 1 5.27	3 39.89	74 29 47.63	35 36 8.38	− 72.75		
. .	. .	. . .	− 1 37.58	1 50.81	60 50 13.10	21 56 33.85	77.85		
. .	28.6	. . .	3 25.51	+ 2 12.74	65 3 47.05	− 26 10 7.80	− 77.06		Magnitude 6.0:
. .	27.5	. . .	− 52.63	− 13.43.26	273 20 22.98	+ 54 26 43.73	+ 99.67		
. .	. .	. . .	+ 2 10.64	− 11.60	169 26 58.34	28 20 37.59	− 95.54		Good.
. .	. .	. . .	− 2 11.52	+ 11.60	10 33 0.85	28 20 38.40	− 95.54		
33.7	27.0	. . .	1 59.15	− 8 8.05	276 40 36.40	+ 57 46 57.15	+ 99.62		Number of entire revolutions assumed.
. .	. .	. . .	13.74	+ 50.13	38 55 39.94	− 0 2 0.69			
. .	26.5	. . .	2.39	4 52.77	78 19 55.55	39 26 13.30	− 69.71		Magnitude 9.0:
33.8	26.1	. . .	47.97	3 6.45	71 42 20.15	32 48 40.90	72.38		Magnitude 8.5.
. .	25.6	. . .	1 17.42	2 34.13	68 6 18.49	29 12 39.24	71.13		Magnitude 8.3.
. .	. .	. . .	1 8.01	2 6.10	63 45 59.09	24 52 19.84	71.20		Magnitude 7.3.
32.5	25.4	. . .	2 45.69	3 59.88	75 41 13.74	36 47 34.49	66.31		Very faint and uncertain; magnitude 9.3.
. .	. .	. . .	3 32.44	1 29.67	55 12 57.58	16 19 18.33	70.80		Magnitude 6.5; declination 5′ less than Argelander.
. .	25.3	. . .	2 26.33	1 36.79	57 14 11.71	18 20 32.46	69.26		
30.0	32.8	29.8544	5 12.94	1 43.84	61 21 32.20	− 22 44 9.22		Ha.	
. .	. .	. . .	2 41.76	1 46.32	61 54 4.74				
34.0	36.7	. . .	1 3.53	0.24	0 13 54.63	+ 38 39 44.62	23.39		
35.5	31.1	29.8769	7 4.58	2 22.36	66 55 19.95	− 28 1 40.71	76.27		
. .	. .	. . .	3 49.14	2 12.65	65 23 25.29	26 29 46.04	76.94		
. .	. .	. . .	3 59.18	2 9.70	64 53 12.05	25 59 32.80	77.35		
35.5	30.5	. . .	8 40.17	3 18.15	73 4 40.38	34 11 1.13	74.77		
. .	. .	. . .	7 16.99	2 26.57	67 30 14.21	28 36 34.96	76.63		
. .	. .	. . .	5 43.01	2 20.99	66 41 42.55	27 48 3.30	76.93		Double; declination of both the same.
. .	. .	. . .	− 4 21.02	+ 2 6.38	64 17 50.08	− 25 24 10.88	77.72		
. .	. .	. . .	+ 2 6.42	− 11.40	169 26 59.49	+ 28 20 38.74	95.55		Image very bad.
35.5	30.3	. . .	− 2 15.51	+ 11.40	10 33 1.99	+ 28 20 37.26	95.55		
. .	. .	. . .	18.91	49.22	38 55 36.93	− 0 1 57.68			
. .	. .	. . .	− 1 9.15	+ 18.61	169 54 8.54	+ 55 47 47.79	99.63		
. .	. .	. . .	+ 1 10.41	− 18.61	343 5 51.47	55 47 47.78	− 99.63		
. .	. .	. . .	− 43.01	1 33.93	303 2 43.26	84 9 4.01	+ 99.85		Double.
. .	. .	. . .	1 0.93	− 1 33.93	303 2 25.34	84 8 46.09	+ 99.85		A. R. same as preceding.
34.5	29.0	. . .	2 57.08	+ 41.30	33 57 46.14	+ 4 55 53.11	− 83.40		
29.4	30.9	29.8741	− 1 16.47	45.68	48 4 30.53	− 9 10 51.28		N.	Cloudy and faint.
. .	. .	. . .	+ 55.23	1 39.35	61 27 36.45	22 50 12.90			Outline indistinct, but limb steady.
41.0	50.2	. . .	− 1 34.28	+ 1 41.74	62 0 7.86				
									Image very faint.
43.0	42.2	. . .	1 38.58	− 13 5.62	273 20 14.80	54 26 35.55	+ 99.12		
. .	. .	. . .	22.66	− 21.13	340 29 17.92	58 24 21.32	− 102.38		
. .	41.1	. . .	1 19.98	+ 1 33.65	57 35 17.35	18 41 38.10	− 79.68		Magnitude 5.5.
. .	41.0	. . .	10.86	+ 47.99	38 55 37.53	0 1 58.28			
42.5	40.3	. . .	1 39.10	− 2 47.59	289 25 33.43	70 31 54.18	+ 100.90		
. .	. .	. . .	− 3 28.38	+ 2 0.06	63 38 30.70	− 24 44 51.45	− 75.46		6th magnitude.
. .	. .	. . .	+ 1 30.98	− 37.01	148 15 54.17	+ 7 9 33.42	84.73		Good observation.
. .	. .	. . .	+ 34.88	+ 1 10.47	229 41 45.95	88 35 25.20	96.79		
41.8	39.1	. . .	− 35.27	− 1 10.50	310 18 33.90	88 35 25.35	96.79		Outside of middle tally.
. .	. .	. . .	3.65	+ 40.59	34 5 38.29	4 48 0.96	78.38		
. .	38.6	. . .	1.75	− 40.59	145 54 20.98	4 48 0.23	78.38		
. .	. .	. . .	− 1 7.88	− 26.84	335 53 26.01	63 0 13.24	88.58		Microscopes C and D suspiciously discordant.
. .	. .	. . .	+ 1 4.52	+ 26.84	204 6 31.39	+ 63 0 10.64	88.58		
41.5	38.6	. . .	− 57.97	2 8.91	65 11 10.67	− 26 17 31.42	− 66.04		Uncertain; very faint.
. .	. .	. . .	− 1 33.01	+ 1 57.05	62 55 24.77	− 78 10 55.98	+ 82.48		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
4–5	Sun	16′ 15″.62
22–23		16 16.27
43–44		16 15.70
1–2	Venus	14.60

DATE.	Number.	OBJECT.	No. of mic. readings.	Tr'sit wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Correc'd.	Barometer.
1863.					° ′ ″	″	″	″	″	″	″	r.	r.	in.
Dec. 9	1	4 Ursæ Minoris S. P.	2	IV-III.	297 4 57.7	64.7	60.2	. .	66.5	56.0	60.84	26.9313	.9613	. .
	2	σ Ceti	1	V.	54 39 57.1	65.1	61.1	61.0	68.1	57.4	61.63	24.4550	.4529	30.176
	3	η Persei	4	I-IV.	343 34 57.6	64.4	62.9	58.8	66.9	57.8	61.40	31.7725	.7170	. .
	4	η Persei, (Ref.)	1	VIII.	196 24 55.9	63.2	58.5	58.6	63.5	55.5	59.20	27.9425	.9672	. .
	5	O. S. 1930-1	5	III-VII.	55 19 57.5	65.5	62.6	62.6	68.6	58.8	62.61	38.1658	.1779	. .
	6	Nadir 3h. 0m.	3	. .	179 59 57.7	64.8	61.9	59.9	65.5	56.5	61.05	29.9000	.9082	
	7	Venus S. L.	5	I-IX.	48 24 57.1	67.8	63.5	66.6	67.1	57.1	63.20	34.6532	.6257	30.366
	8	Venus N. L.	4	II-VIII.	" " "	"	"	"	"	"	"	35.4090	.4143	. .
	9	Nadir 16h. 45m.	3	. .	179 59 57.8	71.6	66.0	64.0	69.3	55.4	64.02	29.9558	.9550	
10	10	Sun S. L.	4	I-IV.	62 4 56.7	69.4	62.7	63.0	69.8	57.4	63.17	31.8552	.8446	30.388
	11	Sun N. L.	4	VI-IX.	61 34 56.5	69.5	63.6	63.0	69.8	57.8	63.37	36.6582	.6714	. .
	12	Neptune	5	III-VII.	38 54 56.1	67.8	63.0	64.5	67.2	56.0	62.43	30.2892	.2812	30.404
	13	α Cassiopeæ, (Ref.)	4	I-IV.	196 54 55.9	68.0	62.0	65.1	63.0	55.1	61.52	32.1042	.1372	. .
	14	α Cassiopeæ	4	VI-IX.	343 4 55.9	66.0	63.2	60.5	64.9	53.3	60.63	27.7135	.6778	. .
	15	Polaris	3	5	310 34 55.6	66.8	62.7	60.1	64.7	52.9	60.47	21.3127	.3144	30.466
	16	Polaris	3	V.	310 19 55.5	66.5	62.0	60.3	64.2	52.8	60.22	30.8990	.8980	. .
	17	Nadir 1h. 22m.	3	. .	179 59 56.0	68.2	63.1	64.2	63.6	52.6	61.28	29.9126	.9118	
	18	β Arietis, (Ref.)	4	I-IV.	161 14 56.9	68.0	64.8	65.2	65.0	54.0	62.32	29.2345	.2432	. .
	19	β Arietis	4	VI-IX.	18 44 57.0	68.1	64.2	65.4	65.5	54.2	62.57	30.6497	.6346	30.412
	20	α Arietis, (Ref.)	4	I-IV.	163 54 57.3	69.2	65.3	66.9	67.6	56.0	63.72	28.3162	.3238	. .
	21	α Arietis	4	IV-IX.	16 4 59.6	71.8	65.4	66.2	67.5	56.0	64.58	31.6742	.6627	. .
	22	ι Cassiopeæ, (Ref.)	3	II-IV.	207 54 56.2	66.0	63.0	64.9	64.0	56.4	61.75	33.0867	.1165	. .
	23	ι Cassiopeæ	3	VI-VIII.	332 4 56.1	67.6	65.7	63.3	66.1	54.7	62.25	26.8400	.8682	30.414
	24	η Persei, (Ref.)	4	I-IV.	196 24 56.1	68.0	61.6	64.9	63.4	54.0	61.33	28.0860	.1175	. .
	25	η Persei	4	VI-IX.	343 34 55.0	65.5	62.6	62.0	63.8	53.1	60.33	31.7110	.6759	. .
	26	ρ³ Arietis	5	III-VII.	21 24 54.8	65.1	61.0	63.4	64.5	53.8	60.60	31.0074	.0104	30.430
14	27	O. S. 48	3	IV-VI.	54 49 55.7	60.9	59.8	56.2	62.7	55.9	58.53	34.5260	.5339	. .
	28	δ Ursæ Majoris S. P.	5	VII-III.	276 49 58.9	62.1	62.7	58.4	65.0	58.9	61.03	33.4378	.4493	29.607
	29	B. A. C. 161	1	V.	36 29 58.0	64.0	62.6	58.5	65.2	57.8	61.02	30.8750	.8725	. .
	30	B. A. C. 167	5	III-VII.	" " "	"	"	"	"	"	61.02	29.2296	.2417	. .
	31	Nadir	2	. .	179 59 59.2	66.1	65.4	61.4	64.8	58.2	62.52	29.9355	.9347	
	32	Anon. 0h. 56m. 57s.	1	V.	63 24 58.8	64.9	63.0	61.1	64.6	57.9	61.72	31.2700	.2820	29.688
15	33	Sun N. L.	4	I-IV.	61 54 59.0	68.1	64.7	64.9	65.8	60.4	63.82	34.2450	.2522	30.100
	34	Sun S. L.	4	VI-IX.	62 24 59.1	69.0	63.9	65.3	66.7	60.3	64.05	29.3870	.4174	. .
	35	Nadir 18h. 34m.	3	.	179 59 59.0	68.7	65.0	63.0	64.9	58.0	63.10	29.9527	.9521	
	36	α Andromedæ, (Ref.)	4	I-IV.	169 24 59.1	69.2	67.6	67.8	65.8	57.2	64.45	25.8395	.8351	. .
	37	α Andromedæ	4	VI-IX.	10 34 59.6	71.7	67.2	68.3	67.5	58.1	65.40	34.1665	.1778	30.216
	38	Neptune	5	III-VII.	38 54 60.0	70.9	67.7	67.4	69.8	59.9	65.95	31.5186	.5104	. .
	39	Lacaille 118	5	III-VII.	64 14 56.5	65.1	63.1	63.8	63.5	54.9	61.32	28.9086	.9119	. .
	40	Anon. 0h. 30m. 3s.	1	V.	" " "	"	"	"	"	"	"	46.1520	.1636	. .
	41	Anon. 0h. 30m. 7s.	1	VI.	" " "	"	"	"	"	"	"	47.3900	.4021	. .
	42	Anon. 0h. 31m. 41s.	1	V.	" " "	"	"	"	"	"	"	27.4020	.4051	. .
	43	Nadir 0h. 41m.	3	. .	179 59 55.7	66.1	63.0	62.3	62.0	52.8	60.32	29.8777	.8770	
	44	Lacaille 241	3	VII-IX.	64 24 56.5	65.7	63.3	63.5	63.8	54.1	61.15	34.2683	.3098	30.230
	45	Anon. 0h. 48m. 45s.	5	III-VII.	" " "	"	"	"	"	"	"	48.1128	.1267	. .
	46	ε Piscium, (Ref.)	2	III & V.	148 14 56.1	65.5	63.0	61.5	63.0	52.8	60.32	26.9580	.9564	. .
	47	ε Piscium	2	VIII & IX.	31 44 55.0	64.5	61.3	61.0	62.1	53.8	59.62	32.8135	.8188	. .
	48	Polaris	5	1-5.	310 19 55.1	65.1	62.0	59.0	62.7	52.5	59.40	30.9890	.9895	30.240
	49	O. S. 1127	5	III-VII.	55 9 55.9	65.3	63.3	63.6	64.1	55.0	61.20	26.9674	.9728	. .
	50	Anon. 2h. 2m. 34s.	3	IV-VI.	57 24 51.3	64.2	61.8	62.0	63.2	56.0	59.75	43.9927	.9984	. .
	51	Anon. 2h. 5m. 9s.	3	IV-VI.	" " "	"	"	"	"	"	"	48.6037	.5915	. .
	52	Anon. 2h. 15m. 43s.	5	III-VII.	57 9 52.5	63.1	60.7	61.2	62.3	54.0	58.97	31.6458	.6344	30.260
	53	Venus S. L.	5	I-IX.	50 14 54.6	64.9	61.9	64.9	61.8	53.9	60.33	26.1450	.1615	30.435
	54	Venus N. C.	4	II-VIII.	" " "	"	"	"	"	"	"	26.9370	.9389	. .
	55	ε Bootis	5	I-IX.	11 14 54.9	66.9	63.6	66.4	61.4	51.5	60.78	30.7038	.6776	. .
	56	Nadir 17h. 25m.	1	. .	179 59 55.8	65.6	64.1	64.2	61.1	53.2	60.67	29.8750	.8746	
16	57	Sun N. L.	4	I-IV.	61 54 54.8	65.5	61.7	63.0	62.8	53.6	60.23	28.8380	.8286	. .
	58	Sun S. L.	4	VI-IX.	62 29 54.7	64.9	60.9	63.6	62.0	53.5	59.93	33.5922	.6044	30.451
	59	Moon S. L.	5	I-IX.	40 14 55.9	64.8	62.0	63.5	63.8	55.9	60.98	35.6204	.6075	30.427
	60	Nadir 23h. 40m.	3	. .	179 59 56.2	64.1	62.5	62.4	61.7	53.8	60.12	29.8766	.8759	
	61	β Cassiopeæ	5	III-VII.	340 29 55.5	64.1	63.1	62.2	63.5	52.8	60.20	30.5844	.5594	. .

THERM'S. At.	THERM'S. Ex.	Mic. zero.	CORRECTIONS FOR— Micrometer.	CORRECTIONS FOR— Object.	Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
°	°	r.	′ ″	″	° ′ ″	° ′ ″	″		
. .	37.3	29.8741	+ 1 31.33	— 1 57.05	297 4 35.12	+ 78 10 55.87	+ 82.48	N.	— 0″.38 applied to mean of A, B, E, F.
. .	36.5	. . . .	+ 2 49.97	+ 1 25.00	54 44 16.60	— 15 50 37.35	— 62.41		
. .	. .	. . . .	— 57.78	— 17.78	343 33 45.84	55 19 53.41	72.34		
. .	. .	. . . .	+ 58.53	+ 17.78	196 26 15.51	55 19 54.76	72.34		Quite unsteady. Wire VIII fair.
. .	36.4	. . . .	— 4 20.35	1 26.75	55 17 9.00	16 23 29.75	56.42		
33.0	31.3	29.8067	2 31.02	59.53	48 23 31.71	9 29 40.06		Ha.	
. .	. .	. . . .	2 55.82	59.53	48 23 6.91				Image exceedingly faint.
37.0	35.8	. . . .	1 3.90	1 46.56	62 5 45.83	22 55 49.77			
. .	. .	. . . .	3 35.23	1 44.07	61 33 12.21				
32.5	28.2	29.8709	12.86	49.68	38 55 39.25	— 0 2 0.00			
. .	. .	. . . .	— 1 11.06	+ 18.78	196 54 9.24	+ 55 47 48.49	99.86		
. .	28.0	. . . .	+ 1 8.76	— 18.78	343 5 50.61	55 47 48.64	99.86		
32.5	27.4	. . . .	+ 4 28.28	1 12.83	310 18 15.92	88 35 23.33			All at wire 5.
. .	. .	. . . .	— 32.25	1 12.83	310 18 15.14	88 35 24.11			All at wire V.
. .	. .	. . . .	+ 19.68	— 21.03	161 15 0.97	20 8 40.22	80.12		
32.0	26.9	. . . .	— 23.94	+ 21.03	18 44 59.66	20 8 39.59	80.12		
. .	. .	. . . .	+ 48.50	— 17.86	163 55 34.36	22 49 13.61	78.09		
. .	. .	. . . .	— 56.18	+ 17.86	16 4 26.26	22 49 12.99	78.09		
. .	. .	. . . .	— 1 41.76	+ 32.83	207 53 52.82	66 47 32.07	80.45		
31.5	26.5	. . . .	+ 1 36.02	— 32.83	332 6 5.44	66 47 33.81	80.45		
. .	. .	. . . .	+ 54.97	+ 18.08	196 26 14.38	55 19 53.63	72.54		
. .	. .	. . . .	— 56.59	— 18.08	343 33 45.66	55 19 53.59	72.54		
31.0	26.0	. . . .	35.73	+ 24.36	21 24 49.23	+ 17 28 50.02	64.17		
. .	. .	29.8543	2 26.72	+ 1 21.81	54 48 53.62	— 15 55 14.37	— 80.35	N.	Faint. Very uncertain.
51.2	47.0	. . . .	1 52.72	— 7 32.13	276 40 36.18	+ 57 46 56.93	+ 101.26		
. .	. .	. . . .	— 37.00	+ 42.93	36 30 6.95	2 23 32.30	— 85.41		Magnitude 6.5:
. .	45.5	. . . .	+ 19.21	42.95	36 31 3.18	+ 2 22 36.07	85.28		Magnitude 7.2:
46.8	41.6	. . . .	— 44.76	1 56.63	63 26 13.59	— 24 32 34.34	74.10		
44.5	43.3	29.8531	— 2 17.92	1 42.84	61 54 28.74	— 23 17 6.64		Ha.	
. .	. .	. . . .	+ 13.66	+ 1 45.34	62 27 3.05				
. .	. .	29.8667	+ 2 6.40	— 11.21	169 26 59.64	+ 28 20 38.89	95.48		
42.0	37.6	. . . .	— 2 15.16	+ 11.21	10 33 1.45	+ 28 20 37.80	95.48		
. .	. .	. . . .	— 20.18	48.41	38 55 34.18	— 0 1 54.93			
. .	. .	. . . .	+ 29.94	2 4.37	64 17 35.63	25 23 56.38	76.20		8th magnitude.
. .	. .	. . . .	— 8 30.96	2 3.56	64 8 33.92	25 14 54.67	75.96		8th magnitude.
. .	. .	. . . .	— 9 9.79	2 3.51	64 7 55.04	25 14 15.79	75.95		8th magnitude.
. .	. .	. . . .	+ 1 17.18	2 4.47	64 18 22.97	25 24 43.72	75.81		9th magnitude.
42.0	37.0	. . . .	— 2 19.30	2 5.16	64 24 47.01	25 31 7.76	74.64		
. .	. .	. . . .	— 9 32.50	+ 2 4.50	64 17 33.15	— 25 23 53.90	74.48		7th magnitude.
. .	. .	. . . .	+ 1 31.24	— 37.30	148 15 54.26	+ 7 9 33.51	84.53		Image very indistinct.
. .	. .	. . . .	— 1 32.55	+ 37.30	31 44 4.36	7 9 34.88	84.53		
41.5	36.5	. . . .	— 35.21	— 1 11.07	310 18 13.12	+ 88 35 26.13	98.27		
. .	. .	. . . .	+ 1 30.74	+ 1 26.78	55 12 58.72	— 16 19 19.47	69.81		
. .	. .	. . . .	— 7 23.06	1 33.93	57 19 10.62	18 25 31.37	66.03		
. .	. .	. . . .	9 47.08	1 33.79	57 16 46.46	18 23 7.21	65.55		
41.0	36.2	. . . .	— 55.42	1 33.43	57 10 36.98	18 16 57.73	— 63.42		
33.2	31.5	29.8680	+ 1 56.21	1 4.86	50 18 1.40	— 11 24 9.59		N.	
. .	. .	. . . .	+ 1 31.84	1 4.86	50 17 37.03				
. .	. .	. . . .	— 25.38	12.23	11 14 47.63	+ 27 38 51.62	+ 67.83		Quite uncertain. Seen with great difficulty.
. .	. .	. . . .	+ 32.56	1 45.70	61 57 18.49	— 23 19 55.52			
38.5	37.6	. . . .	— 1 57.15	+ 1 48.26	62 29 51.04				Hazy. Both limbs ill-defined.
42.0	34.6	. . . .	— 2 59.94	— 53 0.14	39 19 0.90	— 0 25 21.65			
. .	33.7	. . . .	— 21.67	— 21.65	340 29 16.88	+ 58 24 22.37	— 102.79		

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
		′ ″
10–11	Sun	16 16.81
33–34		16 17.15
57–58		16 16.28
7–8	Venus	12.90
53–54		12.56

DATE.			MICROSCOPES.						MICROMETER.			Barometer.
						D.	E.	F.	Mean.	Observed.	Correc'd.	
					″	″	″	″	″	r.	r.	in.
1863. Dec. 9			[illegible]	[illegible]	60.3	. .	61.6	51.5	58.63	34.5910	.5791	30.418
			[illegible]	[illegible]	59.8	58.6	61.3	51.4	58.43	23.2606	.2942	30.404
			[illegible]	[illegible]	63.0	59.9	63.9	54.5	60.65	31.1147	.1146	. .
			[illegible]	[illegible]	64.0	67.0	66.1	58.9	63.73	32.0750	.0851	30.036
			[illegible]	[illegible]	64.8	64.8	64.3	54.2	62.35	29.9450	.9442	. .
			[illegible]	[illegible]	62.5	62.4	63.5	55.0	61.12	30.5898	.5775	30.116
			[illegible]	67.1	65.1	64.7	61.0	55.6	62.37	29.9687	.9684	
			[illegible]	62.5	61.1	61.9	61.1	56.0	59.77	30.7400	.7346	30.012
				"	"	"	"	"	"	31.4890	.4875	. .
			[illegible]	62.7	60.4	62.1	62.6	55.8	60.02	29.5037	.5023	. .
			[illegible]	67.8	65.0	64.9	64.7	55.0	62.47	29.9695	.9691	. .
			[illegible]	68.6	64.2	66.1	64.6	53.9	62.53	31.8478	.8595	30.003
			[illegible] 14 57.3	68.6	65.8	67.9	66.2	54.5	63.38	28.6332	.6368	.
			[illegible] 4 56.5	67.9	64.6	67.5	61.3	53.4	62.37	27.0380	.0450	. .
			[illegible] 55.6	67.2	64.5	65.2	61.8	51.4	60.95	29.8845	.8837	
			[illegible] 19 55.6	67.6	64.3	66.0	63.3	52.7	61.58	28.1726	.1754	. .
			[illegible] 29 57.1	68.6	64.7	65.9	62.4	52.6	61.88	30.1702	.1712	30.111
			[illegible] 34 56.4	67.2	61.1	63.5	65.0	57.7	61.98	34.5352	.5251	. .
			[illegible] 59 55.2	64.7	60.3	61.6	64.0	55.3	60.18	29.7278	.7372	30.442
			[illegible] 29 55.1	61.5	59.0	57.2	62.0	51.0	57.63	27.0197	.0263	30.468
			22 24 55.8	64.4	62.0	59.0	64.3	54.8	60.05	34.5730	.5414	. .
		[illegible]	157 39 55.4	64.3	61.2	60.4	63.4	52.1	59.47	34.8220	.8353	. .
			311 39 55.3	63.6	60.9	58.3	62.8	52.0	58.82	29.2880	.2981	. .
		[illegible]	62 49 57.1	66.2	62.1	62.9	65.4	55.9	61.60	27.9000	.9055	. .
			" " "	"	"	"	"	"	"	35.7300	.7181	. .
			179 59 55.8	64.8	62.1	62.3	62.3	52.4	59.95	29.8924	.8910	
		[illegible]	20 54 55.5	65.3	61.9	61.8	64.0	53.4	60.32	30.9150	.9062	30.455
		[illegible]	61 59 55.9	66.1	62.5	64.0	65.0	55.5	61.50	33.3182	.3275	. .
		VI-IX.	62 29 55.4	66.9	61.8	64.4	65.3	55.2	61.50	28.4092	.4329	30.448
		[illegible]	0 14 57.0	65.8	62.9	62.6	64.0	53.7	61.00	31.9226	.9030	. .
			179 59 56.1	67.0	62.8	63.5	63.3	53.6	61.05	29.9465	.9489	
		III-VI.	28 9 57.3	67.5	64.0	64.1	68.5	58.9	63.38	30.3954	.3977	29.986
		I-IV.	190 29 57.3	63.8	62.0	61.0	63.5	57.0	60.78	32.2127	.2409	. .
		VI-IX.	349 29 57.4	66.2	65.3	62.5	65.1	56.0	62.25	27.6452	.6156	. .
		I-IV.	164 49 57.2	67.3	63.0	63.4	68.0	56.8	62.62	34.5612	.5479	. .
		VII-IX.	15 9 58.5	68.4	64.5	63.0	67.5	57.0	63.15	25.3043	.3161	. .
		V.	" " "	"	"	"	"	"	"	19.9200	.9264	. .
		V.	" " "	"	"	"	"	"	"	29.8700	.8671	30.000
			179 59 59.1	67.2	64.7	63.3	65.1	57.1	62.92	29.9570	.9565	. .
		III-VII.	58 14 59.0	70.0	65.7	66.3	71.9	62.9	65.97	32.3480	.3584	. .
		III-VII.	64 31 54.4	64.0	59.5	59.6	64.1	54.5	59.35	31.9538	.9599	. .
		III-VII.	38 49 54.1	63.0	60.5	58.8	65.3	54.3	59.33	38.4788	.4743	30.010
		I-IX.	54 31 56.8	65.7	62.1	63.5	65.6	56.9	61.77	27.9446	.9536	30.27
	1	II-VIII.	" " "	"	"	"	"	"	"	28.6705	.6514	. .
	1		179 59 56.2	62.6	62.1	59.7	62.0	54.2	59.47	29.8645	.8537	
	1	I-IV.	61 44 56.1	64.5	61.1	61.0	65.1	57.8	60.93	27.4480	.4477	. .
	4	VI-IX.	62 19 54.6	62.9	59.2	59.3	63.0	55.5	59.08	32.0280	.0540	30.240
	2	I, IX.	61 59 55.3	62.4	59.2	59.3	63.6	57.4	59.53	25.4350	.4559	30.234
	3		179 59 55.6	60.9	60.1	57.2	61.4	53.6	58.13	29.8046	.8046	
	5	III-VII.	327 9 56.0	61.6	. .	55.4	. .	54.5	58.57	33.0846	.0708	30.28
	2	I, III.	149 19 57.4	62.6	61.9	57.7	64.8	54.6	59.83	30.9845	.9785	. .
	2	VII, IX.	30 39 57.4	63.2	61.1	58.8	66.0	58.5	60.83	28.8085	.8216	. .
	1	I-IV.	332 4 56.9	62.6	63.4	57.6	65.1	56.5	60.35	26.9425	.8753	. .
	4	VI-IX.	207 51 56.3	60.2	60.5	58.1	63.0	57.1	59.20	32.8110	.8729	. .
	1	V.	295 14 56.6	60.9	59.1	55.2	63.7	54.6	58.35	32.7040	.6910	30.296
	4	I-IV.	21 59 56.9	63.7	62.0	60.2	63.1	57.6	61.08	31.1602	.1522	. .
	1	VI-IX.	157 59 59.1	65.9	64.0	62.6	63.9	58.5	62.83	31.7385	.7468	. .
	3	5-I.	293 39 57.1	61.4	60.2	56.0	63.3	54.8	58.80	33.0082	.0142	.
	3	IV-VI.	18 19 58.7	64.6	63.6	60.8	63.3	56.9	61.82	28.1153	.1246	30.286
	3		179 59 56.8	63.8	62.6	60.4	63.5	55.6	60.45	29.8825	.8816	

Number.	THERM'S.		Mic. Zero.	CORRECTIONS FOR—		Corrected Reading.	Observed Declination.	Reduct'n to 1860.0.	Observer.	REMARKS.
	At.	Ex.		Micrometer.	Object.					
	°	°	r.	′ ″	′ ″	° ′ ″	° ′ ″	″		″
1	. .	33.6	29.8680	− 2 27.70	− 1 57.95	297 15 32.98	+ 78 21 53.73	+ 104.70	N.	0.68 applied to mean of A, B, E, F.
2	. .	33.3	. . . .	+ 3 26.11	2 51.28	289 25 33.26	80 31 54.01	+ 103.43		
3	. .	. .	. . . .	− 39.08	43.34	324 38 38.23	+ 74 15 1.02	− 102.40		
4	36.0	31.7	29.8692	1 9.48	14 29.43	62 19 24.82	− 23 25 45.57		Ha.	Sun very tremulous and ill-defined.
5										
6	38.0	25.6	29.8928	21.46	− 39 46.11	25 19 53.55	+ 13 33 45.70			Through thick clouds.
7										
8	31.5	22.5	29.8657	27.24	+ 1 11.57	52 30 44.10	− 13 36 52.74		N.	
9	. .	. .	. . . .	− 50.85	1 11.57	52 30 20.49				
10	. .	22.9	. . . .	+ 11.40	+ 1 7.82	47 46 19.24	− 8 52 39.99	+ 51.64		
11										
12	24.5	20.8	. .	− 1 2.51	− 4 5.35	283 54 54.67	+ 65 1 15.42	+ 87.43		Very unsteady and much blurred.
13	. .	20.7	. . . .	+ 38.53	+ 3 24.28	73 19 6.19	− 34 25 26.94	− 56.42		Magnitude 6.0.
14	. .	. .	. . . .	1 28.44	+ 3 22.37	73 9 53.18	− 34 16 13.93	− 54.31		Magnitude 8.0.
15										
16	. .	. .	. . . .	+ 0 52.99	− 31 44.54	17 49 10.03	+ 21 4 29.22			
17	23.0	21.2	. . . .	− 9.58	+ 17.10	15 30 9.40	+ 23 23 29.85			
18	. .	. .	29.8926	− 2 25.24	1 50.75	62 34 27.49	− 23 24 31.08			
19	31.3	28.8	. . . .	+ 4.87	+ 1 48.13	62 1 53.18				
20	31.2	22.1	. . . .	+ 1 29.8.	− 1 27.67	305 29 59.83	+ 86 36 20.58	+ 11.83		
21	. .	. .	. . . .	− 2 25.76	+ 25.83	22 23 0.12	16 30 39.13	− 17.82		
22	. .	. .	. . . .	− 2 34.96	− 25.83	157 36 58.68	16 30 37.93	17.82		Unsteady.
23	. .	21.8	. . . .	+ 18.64	− 1 10.41	311 39 7.05	+ 87 14 32.20	21.07		
24	. .	. .	. . . .	+ 1 2.30	+ 2 1.95	62 53 5.85	− 23 59 26.60	21.53		Magnitude 7.5.
25	. .	. .	. . . .	− 3 2.64	+ 2 1.61	62 49 0.57	− 23 55 21.32	21.53		Magnitude 6.5.
26										Very faint.
27	28.5	20.9	. . . .	31.78	− 33 36.41	20 20 52.13	+ 18 32 47.12			
28	. .	. .	29.9154	− 1 46.98	+ 1 47.56	62 0 2.08	− 23 22 40.87			
29	29.7	30.8	. . . .	+ 46.48	1 50.17	62 32 38.15				
30	. .	. .	. . . .	− 1 2.32	0.25	0 13 58.93	+ 38 39 40.32	18.14		
31										
32	39.0	34.0	29.8635	1 16.76	30.07	28 10 16.69	10 43 22.56		Ha.	
33	. .	. .	. . . .	− 1 14.53	+ 11.14	190 28 57.39	49 22 36.64	63.48		
34	. .	. .	. . . .	+ 1 10 48	− 11.14	349 31 1.59	49 22 37.66	63.48		
35	. .	. .	. . . .	− 2 26.86	− 16.38	164 47 19.38	23 40 58.63	49.41		
36	. .	. .	. . . .	+ 2 22.57	+ 16.38	15 12 42.10	23 40 57.15	49.41		
37	. .	. .	. . . .	5 11.75	16.43	15 15 31.33	23 38 7.92	48.82		Micrometer recorded 24 revolutions.
38	39.0	34.0	. . . .	+ 10 26.95	16.53	+ 15 20 46.63	+ 23 32 52.62	48.19		8th magnitude.
39										
40	. .	. .	. . . .	− 1 18.23	1 37.02	58 15 24.76	− 19 21 45.51	31.68		
41	. .	. .	. . . .	1 5.73	2 6.08	64 35 59.70	− 25 42 20.45	26.20		
42	38.5	34.1	. . . .	− 4 29.97	48.34	38 46 17.70	+ 0 7 21.55	27.47		
43	36.5	33.5	29.8806	+ 1 0.41	1 17.01	54 37 19.19	− 15 43 28.63		N.	
44	. .	. .	. . . .	38.22	1 17.01	54 36 57.00				
45										Image scarcely visible.
46	. .	. .	. . . .	+ 1 16.28	1 42.79	61 48 0.00	23 10 38.85			
47	41.0	43.8	. . . .	− 1 8.15	1 45.27	62 20 36.20				
48	42.6	50.6	. . . .	+ 2 18.73	+ 1 43.80	62 4 2.06	− 23 10 22.81			
49										
50	42.0	38.1	29.8658	1 40.49	− 38.95	327 7 39.13	+ 71 46 0.12	91.23		″ 0.27 applied to mean of A, C, B.
51	. .	. .	. . . .	− 34.88	+ 35.79	149 18 49.16	8 12 28.41	71.94		Good.
52	. .	. .	. . . .	+ 32.74	+ 35.79	30 41 9.36	8 12 29.89	71.94		
53	. .	. .	. . . .	+ 1 33.80	− 31.94	332 6 2.21	66 47 37.04	84.10		
54	. .	37.8	. . . .	− 1 34.28	+ 31.94	207 53 56.86	66 47 36.11	− 84.10		Good.
55	. .	37.2	. . . .	+ 1 28.58	− 2 7.63	295 11 22.14	76 17 42.89	+ 83.09		
56	. .	. .	. . . .	− 40.33	+ 24.42	21 59 45.17	16 53 54.08	− 65.69		
57	. .	. .	. . . .	+ 35.08	− 24.42	158 0 13.49	16 53 52.74	− 65.69		
58	. .	. .	. . . .	− 1 38.71	+ 2 17.42	293 36 2.67	74 42 23.42	+ 75.92		
59	41.2	36.0	. . . .	+ 54.59	+ 20.08	18 21 16.49	+ 20 32 22.76	− 59.27		
60										

OBSERVED SEMI-DIAMETERS.

Ref. No.	Object.	Semi-diam.
18–19 28–29 46–47	Sun	16′ 17.″16 18.04 18.10
8–9 43–44	Venus	12.11 11.31

OBSERVATIONS

WITH THE

PRIME VERTICAL TRANSIT INSTRUMENT,

1863.

DATE.	No. for reference.	OBJECT.	Vertical.	Telescope.	TIMES OF TRANSIT OVER WIRES.							Telescope.	TIMES OF TRANSIT OVER WIRI					
					A.	B.	C.	D.	E.	F.	G.		G.	F.	E.	D.	C.	B.
1863.					h. m. s.	s.	s.	s.	s.	s.	s.		s.	s.	s.	s.	s.	s.
Jan. 1	1	*a* Lyræ . . .	E.	S.	17 55 9.0	. .	6.0	37.2	8.0	41.0	13.0	N.	8.0	45.0	22.5	1.0	38.2	. .
	2		W.	N.	18 53 46.5	. .	4.2	43.0	22.2	57.8	33.0	S.	29.5	2.0	33.3	6.0	35.0	. .
2	3	*a* Lyræ . . .	E.	N.	17 55 14.5	44.0	14.5	44.0	15.0	44.5	22.0	S.	5.5	45.0	21.0	57.5	35.5	13.5
	4		W.	S.	18 53 51.0	31.5	11.5	48.5	26.0	3.0	44.0	N.	26.5	3.5	32.0	3.5	33.5	3.5
4	5	*a* Lyræ . . .	E.	S.	17 55 13.9	42.0	. .	. .	13.2	46.2	17.0	N.	13.2	49.3	27.0	. .	. .	22.0
	6		W.	N.	18 53 51.0	30.2	. .	. .	25.2	3.0	40.0	S.	34.2	7.0	38.7	. .	. .	9.5
16	7	*a* Lyræ . . .	E.	N.	17 56 . .	. .	25.0	53.0	. .	54.0	31.5	S.	10.0	51.0	. .	4.0	41.0	. .
	8		W.	S.	18 55 . .	. .	27.5	6.0	. .	18.0	1.0	N.	39.0	15.0	. .	18.0	46.8	. .
30	9	*a* Lyræ . . .	E.	S.	17 55 21.7	50.2	19.3	50.0	21.6	. .	. .	N.	. .	. .	33.5	12.7	51.0	30.0
	10		W.	N.	18 54 16.3	54.5	34.3	11.5	50.3	. .	. .	S.	. .	. .	2.5	34.2	4.3	33.3
Feb. 3	11	*a* Lyræ . . .	E.	N.	17 55 38.5	4.5	39.8	5.5	36.2	6.0	43.0	S.	21.5	0.3	36.0	16.5	50.0	29.2
	12		W.	S.	18 54 41.0	13.5	56.5	32.5	10.2	44.3	26.0	N.	2.5	38.5	10.2	42.0	11.0	39.0
6	13	*a* Lyræ . . .	E.	S.	17 55 36.2	4.0	33.2	3.0	34.5	7.0	38.0	N.	37.0	12.3	49.7	28.0	6.5	45.3
	14		W.	N.	18 54 36.2	15.0	54.0	30.8	10.5	47.0	22.2	S.	18.3	50.5	22.0	54.0	24.2	54.0
9	15	*a* Lyræ . . .	E.	N.	17 55 49.0	16.5	46.5	15.5	. .	16.0	53.0	S.	34.5	14.5	. .	26.5	3.0	42.5
	16		W.	S.	18 54 48.0	22.5	2.2	40.0	. .	53.0	34.0	N.	16.8	52.0	. .	54.0	24.0	53.0
12	17	*a* Lyræ . . .	E.	S.	17 55 49.2	17.5	46.3	16.8	48.2	18.3	52.1	N.	51.0	28.0	5.3	43.0	22.2	1.0
	18		W.	N.	18 54 47.5	25.5	5.5	42.0	22.0	57.8	36.0	S.	31.3	3.3	35.3	7.8	37.0	6.8
20	19	*a* Lyræ . . .	E.	N.	17 56 13.8	42.5	14.0	42.0	12.2	43.3	20.0	S.	58.0	40.0	14.8	52.0	28.3	8.5
	20		W.	S.	18 55 12.5	53.0	32.6	8.0	46.4	21.0	2.2	N.	42.0	18.0	47.8	20.2	48.3	20.3
Mar. 2	21	*a* Lyræ . . .	E.	S.	17 56 36.2	5.0	34.2	2.5	33.5	7.8	41.8	N.	40.5	17.5	55.5	33.8	8.3	44.0
	22		W.	N.	18 55 49.5	27.8	5.5	40.8	15.0	53.3	30.5	S.	28.4	2.0	35.0	5.2	35.8	4.8
4	23	*a* Lyræ . . .	E.	N.	17 55 54.5	25.0	53.0	23.0	54.2	22.8	59.5	S.	33.5	14.0	48.2	28.8	5.8	45.2
	24		W.	S.	18 54 50.0	33.0	12.2	48.0	27.2	2.5	46.0	N.	20.5	58.0	28.0	58.0	27.0	56.0
8	25	*a* Lyræ . . .	E.	S.	17 56 13.0	42.0	11.5	41.2	11.5	44.0	16.0	N.	23.0	59.0	37.0	14.8	51.4	31.5
	26		W.	N.	18 55 15.0	54.8	33.8	11.0	49.0	27.0	3.0	S.	8.8	40.8	12.2	44.0	12.8	43.0
11	27	*a* Lyræ . . .	E.	N.	17 56 34.2	2.0	33.5	1.8	34.0	5.3	34.0	S.	15.5	48.0	25.1	3.0	38.0	19.0
	28		W.	S.	18 55 42.2	20.0	1.3	37.0	15.0	51.3	24.1	N.	6.8	37.0	7.3	39.0	8.1	40.5
13	29	*a* Lyræ . . .	E.	S.	17 55 58.5	25.0	55.0	24.5	54.5	25.8	56.8	N.	58.5	36.0	15.0	51.5	29.5	10.5
	30		W.	N.	18 55 1.0	38.3	20.0	56.0	34.5	13.5	51.0	S.	48.7	20.8	53.3	22.3	51.5	21.3
26	31	*a* Lyræ . . .	E.	N.	17 57 1.5	29.0	1.5	30.8	2.7	35.2	4.8	S.	55.0	26.3	3.7	39.0	15.0	53.8
	32		W.	S.	18 56 17.2	55.0	33.8	10.0	46.2	22.2	55.3	N.	45.0	14.8	47.2	18.3	48.2	19.8
29	33	*a* Lyræ . . .	E.	S.	17 56 37.8	6.0	34.8	4.3	35.2	8.8	39.8	N.	38.0	14.3	52.0	29.8	7.5	36.5
	34		W.	N.	18 55 43.0	31.3	0.6	38.5	15.0	52.3	28.8	S.	26.6	58.8	31.0	2.0	31.3	1.8
31	35	*a* Lyræ . . .	E.	N.	17 56 48.0	17.2	47.8	16.8	48.0	19.0	48.8	S.	41.2	13.8	50.2	27.0	4.3	43.8
	36		W.	S.	18 55 54.5	34.0	14.0	50.8	27.0	3.5	37.0	N.	29.8	59.4	30.0	1.3	31.0	2.0
Apr. 2	37	*a* Lyræ . . .	E.	S.	17 57 6.8	34.0	5.0	35.0	5.0	37.8	10.5	N.	2.5	40.0	15.5	52.0	31.0	11.5
	38		W.	N.	18 56 13.0	50.2	29.8	7.0	45.3	22.0	59.5	S.	50.2	23.2	55.0	26.3	56.0	26.5
3	39	*a* Lyræ . . .	E.	N.	17 57 12.0	40.5	12.8	40.0	12.0	. .	13.0	S.	5.8	. .	14.8	52.0	28.0	10.0
	40		W.	S.	18 56 18.8	57.3	38.2	13.5	51.0	. .	1.0	N.	54.8	. .	56.0	26.3	54.0	27.0
5	41	*a* Lyræ . . .	E.	S.	17 57 14.3	43.8	13.0	43.0	. .	45.3	17.0	N.	11.5	49.2	. .	2.0	40.8	20.0
	42		W.	N.	18 56 19.2	57.0	37.0	15.2	. .	29.0	6.0	S.	58.8	32.1	. .	34.5	4.8	35.5
9	43	*a* Lyræ . . .	E.	N.	17 57 19.5	49.0	19.5	48.8	21.0	52.8	22.0	S.	15.3	49.0	26.0	2.5	36.8	20.0
	44		W.	S.	18 56 32.0	6.3	48.5	24.2	2.5	41.2	12.5	N.	7.5	37.3	10.8	40.3	9.5	39.5
10	45	*a* Lyræ . . .	E.	S.	17 57 23.0	51.5	21.0	50.8	21.0	52.8	26.5	N.	17.5	56.0	31.2	9.0	47.0	26.3
	46		W.	N.	18 56 30.0	8.0	48.0	25.5	2.5	39.3	16.5	S.	8.3	41.0	12.8	43.2	13.5	44.2
30	47	*a* Lyræ . . .	E.	N.	17 57 36.2	4.0	35.0	5.2	35.0	7.3	35.8	S.	36.0	7.0	45.3	24.0	59.5	40.0
	48		W.	S.	18 56 35.0	14.3	55.0	31.7	9.3	46.2	19.0	N.	17.2	46.3	19.0	50.6	18.5	50.0
May 1	49	*a* Lyræ . . .	E.	S.	17 57 35.0	2.3	32.0	3.3	32.8	4.5	38.0	N.	28.8	6.0	42.0	19.5	57.2	38.0
	50		W.	N.	18 56 34.2	11.0	51.0	28.3	6.8	43.0	21.0	S.	10.8	44.0	16.0	47.0	17.0	47.5

LEVEL READINGS.				Mean, ½ (S.-N.)	Correction for level.	Correction for azimuth.	Apparent declination.	Reduction to 1860.0.	Seconds of mean declination, 1860.	Weight.	Observer.	REMARKS.
Before reversal.		After reversal.										
N.	S.	N.	S.									
d.	d.	d.	d.	d.	″	″	° ′ ″	″	° ′ ″			
38.68 35.55	39.63 39.15	37.05 36.27	40.48 37.52	+ 1.09 1.21	+ 1.14	+ 0.04	38 39 31.27	− 11.20	38 39 20.07	2 3	H.	
37.90 36.30	41.53 39.47	38.72 37.88	40.12 39.47	1.26 1.19	1.20	0.04	31.52	10.91	20.61	2 3	Ha.	Very faint and indistinct. Very faint and indistinct.
36.63 34.05	35.90 36.55	34.67 35.23	37.17 34.67	0.44 + 0.48	+ 0.46	0.04	30.50	10.29	20.21	3 3	H.	Observed through haze.
38.40 41.47	40.58 39.00	40.82 39.70	38.65 40.72	0.00 − 0.36	− 0.17	0.04	26.82	6.68	20.14	1 2		Observed through clouds. Star very unsteady.
38.58 36.85	38.78 38.67	37.17 36.80	39.90 38.10	+ 0.73 0.78	+ 0.74	0.04	22.91	2.77	20.14	3 4		
37.95 42.07	42.57 43.92	40.58 41.38	42.02 44.83	1.51 1.32	1.40	0.04	21.84	1.62	20.22	2 2		Quite unsteady.
38.92 36.17	41.70 40.80	37.20 36.52	42.75 38.98	2.08 + 1.77	+ 1.90	0.04	21.47	0.84	20.63	4 3		
28.82 29.23	29.92 27.80	30.23 27.60	28.45 28.13	− 0.17 0.22	− 0.19	0.04	20.62	− 0.23	20.39	2 2		
37.57 38.27	35.90 38.78	37.12 39.62	37.72 37.30	0.27 0.45	0.35	0.04	20.07	+ 0.34	20.41	3 2		Room opened at 17h. 40m.
39.25 37.62	35.23 33.72	39.27 36.45	34.68 33.68	2.15 1.67	1.88	0.04	18.34	2.06	20.40	3 4		After this observation the diaphragm was removed, and the wires which had been disturbed by the sliding-plate of eye-piece were restored to their places. Focus adjusted anew.
38.18 38.87	35.30 37.30	37.98 39.78	36.82 36.22	1.01 1.28	1.13	0.04	17.07	3.45	20.52	2 3		
46.10 44.35	46.88 44.43	47.18 45.47	45.42 44.12	0.24 0.32	0.28	0.04	16.53	3.74	20.27	3 3		
35.20 33.82	31.13 31.57	34.40 34.45	32.07 30.38	1.60 1.58	1.56	0.04	16.25	4.09	20.34	3 4		
34.87 35.68	34.82 33.65	35.90 34.70	33.95 34.20	0.50 − 0.63	− 0.56	0.04	15.94	4.21	20.15	3 4		Beautifully steady and defined.
41.88 40.42	46.37 44.63	41.40 40.57	46.27 43.73	+ 2.34 + 1.84	+ 2.06	0.04	15.82	4.34	20.16	3 3		
39.07 39.85	36.38 35.18	40.15 38.93	35.33 35.88	− 1.88 1.93	− 1.87	0.04	15.46	4.56	20.02	3 4		Exquisitely defined and steady. Adjusted collimation, Mar. 27.
44.57 44.03	39.65 41.00	43.83 44.40	40.82 40.43	1.98 1.75	1.84	0.04	15.08	4.56	19.64	2 4		
41.22 44.30	38.40 39.88	42.40 43.80	38.05 40.75	1.79 1.87	1.80	+ 0.04	15.29	4.54	19.83	3 3		April 1. Adjusted azimuth and collimation.
35.32 37.53	31.48 34.23	35.55 38.15	32.38 34.00	1.75 1.86	1.78	0.00	15.27	4.45	19.72	2 2		Unsteady; very much blurred.
45.13 46.27	41.87 41.88	46.03 45.85	41.47 42.42	1.96 1.95	1.93	0.00	15.05	4.36	19.41	1 2		
45.50 45.45	41.35 42.35	45.13 46.00	41.57 41.98	1.93 − 1.78	− 1.82	0.00	15.49	4.14	19.63	2 2		
41.08 42.20	44.25 43.25	42.10 41.52	43.02 43.88	+ 1.02 0.85	+ 0.92	0.00	16.26	3.70	19.96	2 3		April 5. Adjusted level and level tube, which was slightly out of plane of axis.
36.53 36.38	36.38 37.37	35.75 36.88	37.10 36.87	0.30 + 0.24	+ 0.27	0.00	16.52	3.60	20.12	4 4		
35.68 36.58	35.55 35.35	36.23 35.98	35.10 36.15	− 0.31 0.27	− 0.29	0.00	19.58	0.55	20.13	4 4		
34.30 33.60	33.00 33.45	33.48 34.02	33.65 33.07	0.28 − 0.27	− 0.27	0.00	38 39 19.64	+ 0.31	38 39 19.95	3 3		Steady, but blurred.

DATE.	No. for reference.	OBJECT.	Vertical.	Telescope.	TIMES OF TRANSIT OVER WIRES.							Telescope.	TIMES OF TRANSIT OVER WIRES.						
					A.	B.	C.	D.	E.	F.	G.		G.	F.	E.	D.	C.	B.	A
1863. May 4	1	a Lyræ . . .	E.	N.	17 57 36.3	5.0	36.1	4.2	35.0	8.5	37.8	S.	35.5	8.3	46.8	23.5	59.0	40.2	67
	2		W.	S.	18 56 34.2	14.5	55.0	31.6	9.0	46.0	18.5	N.	16.5	46.2	19.3	50.0	17.3	48.5	66
10	3	a Lyræ . . .	E.	S.	17 57 45.2	12.5	42.8	13.5	43.8	16.0	49.0	N.	38.8	16.3	54.2	31.2	8.8	48.2	67
	4		W.	N.	18 56 41.0	18.5	58.2	35.2	12.0	49.5	27.0	S.	19.5	52.5	24.5	54.0	25.0	56.2	66
11	5	a Lyræ . . .	E.	N.	17 57 46.3	16.4	46.0	15.5	47.0	18.8	48.0	S.	47.0	19.8	57.7	34.3	11.5	52.3	67
	6		W.	S.	18 56 44.0	22.3	2.0	39.3	16.5	54.8	28.0	N.	26.8	55.2	27.2	59.0	26.5	58.5	66
14	7	a Lyræ . . .	E.	S.	17 57 59.5	27.5	58.0	27.8	58.3	31.5	4.2	N.	55.3	33.0	10.5	48.3	25.5	5.0	67
	8		W.	N.	18 56 52.0	29.3	8.8	46.4	25.0	1.8	39.0	S.	30.0	4.8	37.0	7.0	37.0	8.0	66
15	9	a Lyræ . . .	E.	N.	17 58 1.6	29.0	2.2	30.3	1.8	34.0	2.5	S.	59.2	33.1	10.4	47.5	23.3	4.4	67
	10		W.	S.	18 56 54.5	34.0	14.3	51.2	29.0	7.5	39.0	N.	37.5	6.3	38.2	9.3	38.0	9.5	66
22	11	a Lyræ . . .	E.	S.	17 58 19.0	46.3	17.0	46.0	18.0	49.0	22.8	N.	12.8	51.0	28.0	5.5	42.5	21.8	68
	12		W.	N.	18 57 6.2	45.0	24.2	2.5	41.5	17.0	55.0	S.	46.0	18.0	51.0	21.5	52.0	21.8	66
31	13	a Lyræ . . .	E.	N.	17 58 35.0	3.1	34.0	4.4	34.8	7.8	36.8	S.	35.0	9.0	46.0	25.0	58.0	40.0	68
	14		W.	S.	18 57 17.5	57.0	37.3	13.0	51.5	29.0	3.0	N.	0.3	31.1	2.2	32.8	3.0	34.0	67
	15	η Lyræ (mic.) .	Z.	N.	19 6 35.0	4.1	2.9	2.7	. .	. .	. .	S.	. .	. .	. .	1.9	5.7	2.4	12
	16				14 62.6	69.0	66.2	67.2								63.3	67.9	82.9	20
June 7	17	a Lyræ . . .	E.	S.	17 58 46.0	13.3	44.0	14.0	44.8	17.8	. .	N.	. .	19.0	56.0	34.0	12.8	51.0	68
	18		W.	N.	18 57 24.0	2.0	41.3	19.0	56.5	34.3	. .	S.	. .	36.3	8.2	39.3	10.5	40.0	67
8	19	a Lyræ . . .	E.	N.	17 58 49.0	17.0	48.8	16.7	47.7	21.2	50.0	S.	45.5	21.0	58.2	35.5	12.5	52.0	68
	20		W.	S.	18 57 24.8	5.0	45.0	22.5	59.5	36.0	10.2	N.	7.2	37.2	9.3	40.3	10.0	40.5	67
12	21	a Lyræ . . .	E.	S.	17 58 52.0	21.0	51.2	21.0	53.0	24.5	58.0	N.	49.2	27.0	5.0	40.5	20.0	0.5	68
	22		W.	N.	18 57 28.0	5.8	46.8	24.0	1.5	39.4	17.5	S.	7.5	39.5	12.5	43.8	14.2	45.0	67
14	23	a Lyræ . . .	E.	N.	17 58 57.0	24.0	55.3	25.0	55.7	27.5	56.5	S.	56.0	29.3	7.5	44.0	21.0	3.0	68
	24		W.	S.	18 57 28.0	6.5	48.5	25.0	2.3	40.3	14.3	N.	13.0	43.0	14.8	45.3	14.8	45.8	67
17	25	a Lyræ . . .	E.	S.	17 59 2.8	30.5	0.2	31.0	2.0	34.5	7.0	N.	59.5	35.3	14.0	50.0	28.5	10.0	68
	26		W.	N.	18 57 35.2	13.0	54.5	31.3	9.0	46.0	24.2	S.	14.2	48.0	20.3	51.0	20.5	51.8	67
July 8	27	a Lyræ . . .	E.	N.	17 58 58.2	28.8	58.0	27.3	59.3	32.0	1.7	S.	1.5	34.7	11.3	50.0	27.5	9.0	68
	28		W.	S.	18 57 15.0	58.0	36.7	14.0	52.5	30.0	3.8	N.	4.0	32.8	4.0	35.1	5.8	37.5	67
Sept. 4	29	a Lyræ . . .	E.	S.	18 1 53.3	19.7	51.3	21.5	52.7	26.0	58.3	N.	52.5	29.3	8.0	46.0	25.0	6.5	11
	30		W.	N.	19 8 . .	23.5	4.5	41.0	20.0	59.0	36.5	S.	31.0	3.0	35.7	7.3	38.0	8.5	9
5	31	a Lyræ . . .	E.	N.	18 1 54.0	28.7	54.5	25.3	56.7	27.0	57.7	S.	0.0	34.7	12.5	50.7	27.7	10.5	11
	32		W.	S.	18 59 45.0	25.3	6.3	43.7	22.7	0.5	34.0	N.	36.7	6.3	37.0	10.0	40.0	10.0	9
14	33	a Lyræ . . .	E.	S.	18 2 11.7	39.0	10.0	40.5	11.0	44.7	18.3	N.	10.7	48.0	25.5	4.3	42.7	24.5	12
	34		W.	N.	18 0 1.0	38.5	20.3	58.3	36.0	14.3	52.3	S.	45.0	19.0	50.7	21.3	52.0	23.0	9
15	35	a Lyræ . . .	E.	N.	18 2 11.0	39.7	11.0	40.7	12.5	45.0	14.3	S.	17.7	51.5	29.5	7.5	45.7	25.7	12
	36		W.	S.	18 59 57.5	38.5	21.0	58.3	36.5	14.5	48.3	N.	51.7	22.0	53.3	25.7	55.3	25.5	9
16	37	a Lyræ . . .	E.	S.	18 2 14.0	41.7	13.7	43.5	14.7	48.0	21.0	N.	.	50.7	28.5	6.5	45.0	26.3	12
	38		W.	N.	19 0 3.3	41.5	22.0	1.3	39.3	17.5	54.0	S.	47.0	20.0	52.5	24.7	54.0	25.0	9
17	39	a Lyræ . . .	E.	N.	18 2 12.3	41.7	13.3	43.3	14.5	46.7	17.0	S.	20.0	53.5	32.0	9.7	47.7	29.3	12
	40		W.	S.	19 0 . .	40.3	22.0	59.3	37.5	15.5	49.0	N.	53.0	. .	55.5	26.7	56.3	27.7	9
21	41	a Lyræ . . .	E.	S.	18 2 30.3	0.0	30.5	1.3	32.5	4.0	38.0	N.	33.0	11.0	49.0	28.0	7.3	45.0	12
	42		W.	.	19 0 13.0	54.5	36.0	13.0	52.0	29.5	8.0	S.	. .	35.5	8.5	39.0	10.0	39.7	10
22	43	a Lyræ . . .	E.	N.	18 2 35.5	5.0	36.5	5.7	26.3	8.7	39.0	S.	38.0	11.5	49.5	28.5	7.0	47.5	12
	44		W.	S.	19 0 18.0	58.0	39.0	19.0	56.0	34.5	8.0	N.	9.0	37.3	11.0	41.0	11.0	42.0	10
23	45	a Lyræ . . .	E.	S.	18 2 37.0	4.0	35.0	6.5	36.7	8.5	43.0	N.	37.7	14.3	54.0	30.3	9.5	50.5	12
	46		W.	N.	19 0 19.0	58.0	37.0	17.7	55.3	35.5	12.5	S.	8.0	40.7	14.0	45.0	16.0	48.0	10
26	47	a Lyræ . . .	E.	N.	18 2 40.0	10.0	40.5	10.0	41.0	14.5	44.0	S.	46.0	19.0	57.0	36.0	13.5	54.5	12
	48		W.	S.	19 0 24.0	3.5	44.0	23.0	59.0	38.5	13.0	N.	16.5	46.0	19.5	49.0	15.0	50.0	10
30	49	a Lyræ . . .	E.	S.	18 2 51.0	19.0	49.5	19.0	49.5	23.5	57.5	N.	49.5	26.5	6.5	44.5	22.5	3.5	12
	50		W.	N.	19 0 32.5	10.5	51.5	30.0	8.0	46.0	24.5	S.	18.0	51.0	26.0	55.5	25.5	57.0	10

LEVEL READINGS.				Mean, ½ (S.-N.)	Correction for level.	Correction by azimuth.	Apparent declination.	Reduction to 1860.	Seconds of mean declination, 1860.	Weight.	Observer.	REMARKS.
Before reversal.		After reversal.										
N.	S.	N.	S.									
d.	d.	d.	d.	d.	″	″	° ′ ″	″	° ′ ″			
30.70 32.33	31.58 30.87	31.58 31.57	30.55 31.68	— 0.04 0.34	— 0.18	0.00	38 39 20.03	— 0.45	38 39 19.58	4 4	H.	
30.95 31.98	30.38 32.73	30.68 33.08	31.20 32.78	— 0.01 + 0.11	+ 0.05	0.00	21.64	1.78	19.86	4 3		
38.48 39.18	39.55 39.60	39.07 38.73	39.22 40.32	0.30 + 0.50	+ 0.40	0.00	21.76	1.99	19.77	4 4		
38.68 37.98	36.10 37.75	37.47 38.68	37.30 37.50	— 0.69 — 0.35	— 0.51	0.00	22.98	2.75	20.23	2 3		
38.55 39.25	39.48 39.78	38.92 38.68	39.43 40.42	+ 0.36 0.57	+ 0.46	0.00	22.98	3.04	19.94	3 3		
37.35 37.23	36.62 38.18	36.73 38.11	37.80 37.57	0.08 0.10	0.09	0.00	25.04	5.04	20.00	3 2		
31.95 34.78	33.55 34.03	33.33 33.42	33.33 36.75	0.40 + 0.40	+ 0.39	0.00	38 39 28.13	7.66	20.47	2 2		Badly defined.
- -	- -	34.88	34.70	— 0.09	- -	0.00	38 54 49.40	16.43	32.97			
37.18 37.27	36.67 37.98	36.73 38.28	37.17 37.03	0.02 0.13	— 0.08	0.00	38 39 29.90	9.70	20.20	2 2		
37.18 39.48	38.03 38.12	38.53 38.53	37.35 39.23	0.08 0.17	— 0.12	0.00	30.30	9.99	20.31	2 3		
33.50 32.57	32.13 34.38	32.28 33.97	33.55 32.97	— 0.02 + 0.20	+ 0.09	0.00	31.57	11.30	20.27	1 2		Extremely ill-defined and unsteady.
33.62 35.68	34.55 34.85	34.70 34.88	34.17 36.12	0.10 0.10	0.10	0.00	32.35	12.00	20.35	1 3		Very unsteady.
26.95 28.13	27.28 30.27	26.87 29.03	28.85 30.10	0.58 0.80	0.68	0.00	33.18	12.96	20.22	3 3		
39.37 41.30	41.23 40.95	40.23 40.22	40.55 42.27	0.54 0.42	0.48	0.00	39.52	19.37	20.15	3 3		
56.37 59.97	59.75 66.65	56.53 63.20	63.92 65.72	2.69 2.30	2.46	0.00	53.17	32.66	20.51	2 2	N.	Rapid fall of temperature in the room.
55.63 60.98	62.27 62.16	58.72 59.17	61.12 65.22	2.26 1.81	2.00	0.00	53.40	32.82	20.58	3 3		
57.27 57.80	58.78 63.00	56.00 60.60	62.02 61.10	1.88 1.42	1.63	0.00	53.94	33.54	20.40	4 3		
53.68 57.45	58.92 58.63	56.02 55.93	57.82 60.85	1.76 1.52	1.62	0.00	53.92	33.69	20.23	4 2		
56.52 55.78	57.80 61.32	54.75 58.18	60.43 59.58	1.74 1.73	1.70	0.00	54.21	33.80	20 41	4 3		
53.85 56.78	58.25 58.35	55.50 55.45	56.52 60.20	1.36 + 1.58	+ 1.45	0.00	54.16	33.91	20.25	4 4		
47.23 49.83	46.53 49.62	47.82 51.07	47.92 49.83	— 0.15 — 0.36	— 0.25	0.00	54.52	34.20	20.32	3 1		Before this observation adjusted level of axis.
49.38 56.13	50.58 55.72	52.33 57.50	52.32 57.25	+ 0.30 — 0.16	+ 0.07	0.00	54.80	34.22	20.58	2 1		Adjusted axis of reversal for verticality, in order that the action of the counterpoises might be equal.
54.08 56.58	54.12 56.98	54.88 57.77	54.87 57.37	— 0.01 0.00	0.00	0.00	54.29	34.24	20.05	3 2		
54.92 57.92	54.53 57.60	55.03 58.47	55.13 58.27	0.07 0.13	— 0.10	0.00	54.45	34.25	20.20	4 1	Ha.	
49.90 52.97	49.10 52.27	50.75 53.92	49.88 52.80	0.42 — 0.45	— 0.43	0.00	38 39 54.92	— 34.40	38 39 20.52	5 4		

DATE.	No. for reference.	OBJECT.	Vertical.	Telescope.	TIMES OF TRANSIT OVER WIRES.							Telescope.	TIMES OF TRANSIT OVER WIRES.						
					A.	B.	C.	D.	E.	F.	G.		G.	F.	E.	D.	C.	B.	A.
1863.					h. m. s.	s.	s.	s.	s.	s.	s.		s.	s.	s.	s.	s.	s.	m. s.
Oct. 9	1	α Lyræ . . .	E.	N.	18 3 7.3	36.0	7.7	37.5	9.0	41.3	11.5	S.	15.0	48.0	26.0	4.7	42.7	24.0	13 3.7
	2		W.	S.	19 0 52.0	34.0	14.0	51.7	31.3	8.0	42.7	N.	43.0	13.0	46.3	17.5	47.0	19.7	10 47.7
12	3	α Lyræ . . .	E.	S.	18 3 17.0	45.0	15.0	44.5	16.7	49.0	24.0	N.	19.7	55.5	34.0	13.3	50.0	32.5	13 11.7
	4		W.	N.	19 1 0.5	39.5	20.0	58.5	37.0	15.3	52.5	S.	49.0	21.7	55.5	27.3	57.0	27.7	10 55.0
17	5	α Lyræ . . .	E.	N.	18 3 26.5	56.0	28.0	57.0	29.0	1.5	31.0	S.	35.0	9.0	47.0	25.5	3.0	44.5	13 26.0
	6		W.	S.	19 1 8.5	48.5	30.5	8.5	47.5	25.0	59.5	N.	2.0	32.0	4.0	36.5	5.5	36.0	11 6.0
Nov. 4	7	α Lyræ . . .	E.	S.	18 4 15.3	42.7	13.7	44.5	14.7	48.5	20.3	N.	12.0	48.0	30.5	7.0	45.0	25.7	14 5.0
	8		W.	N.	19 2 4.3	42.0	23.0	1.0	38.7	19.3	55.5	S.	. .	. .	54.3	25.0	55.0	26.7	11 54.5
7	9	α Lyræ . . .	E.	N.	18 4 19.5	49.5	20.0	49.0	21.0	54.5	23.5	S.	26.5	1.0	38.5	17.5	54.5	35.5	14 18.0
	10		W.	S.	19 2 7.0	48.5	29.5	7.0	45.5	24.0	58.0	N.	0.0	29.5	1.0	33.5	3.0	34.0	12 3.5
13	11	α Lyræ . . .	E.	S.	18 4 34.7	2.5	33.0	3.3	34.0	8.3	41.5	N.	30.0	8.3	46.5	25.0	2.5	43.0	14 20.5
	12		W.	N.	19 2 26.3	4.7	45.5	23.5	1.0	40.5	17.7	S.	. .	40.3	14.5	45.3	14.5	46.0	12 13.7
14	13	α Lyræ . . .	E.	N.	18 4 33.5	2.7	34.3	3.3	34.5	7.0	36.7	S.	42.7	16.3	53.7	32.3	10.3	52.0	14 32.7
	14		W.	S.	19 2 . .	5.0	47.0	23.7	3.0	41.0	14.3	N.	19.3	49.3	20.0	53.0	22.3	53.3	12 23.0
17	15	α Lyræ . . .	E.	S.	18 4 44.5	11.7	42.7	13.0	43.7	16.7	50.3	N.	42.5	21.0	0.3	37.3	15.0	56.5	14 34.0
	16		W.	N.	19 2 36.7	14.7	55.3	33.3	10.3	50.0	27.5	S.	20.0	53.0	26.0	57.0	27.3	58.3	12 26.0
18	17	α Lyræ . . .	E.	N.	18 4 42.7	12.0	43.0	12.3	44.3	16.3	46.5	S.	49.0	23.5	1.7	39.5	16.7	58.5	14 38.3
	18		W.	S.	19 2 35.5	15.7	57.8	34.3	13.0	50.7	25.0	N.	. .	57.7	30.0	1.7	31.0	2.3	12 31.7
20	19	α Lyræ . . .	E.	S.	18 4 48.5	16.5	47.0	17.5	49.0	21.0	55.5	N.	44.0	20.5	59.5	38.0	14.5	56.0	14 34.5
	20		W.	N.	19 2 42.0	20.5	1.5	39.0	17.0	56.5	35.0	S.	22.5	56.0	29.5	cloudy	. .	. .	. . .
26	21	α Lyræ . . .	E.	N.	18 4 49.5	19.0	50.7	18.5	51.0	22.7	53.3	S.	54.3	27.0	5.7	43.0	20.5	1.7	14 41.0
	22		W.	S.	19 2 45.5	26.0	7.3	44.7	23.5	1.0	35.0	N.	37.5	7.3	39.5	10.7	30.0	11.7	12 40.5
30	23	α Lyræ . . .	E.	S.	18 4 . .	18.5	48.0	18.5	49.7	23.0	56.5	N.	49.0	26.0	6.0	43.5	22.5	2.0	14 40.0
	24		W.	N.	19 2 57.0	25.5	6.5	43.0	21.0	0.0	38.0	S.	32.0	6.0	40.0	10.0	40.5	10.5	12 28.0
Dec. 1	25	α Lyræ . . .	E.	N.	18 4 47.0	17.0	47.5	15.7	48.3	20.7	50.5	S.	52.3	25.7	4.0	41.0	19.0	0.0	14 41.0
	26		W.	S.	19 2 49.5	29.5	11.3	48.7	26.5	4.0	38.0	N.	40.7	10.0	42.0	14.0	43.0	14.0	12 43.3
3	27	α Lyræ . .	E.	S.	18 4 55.0	22.3	53.5	23.0	53.3	27.0	0.0	N.	51.7	29.3	8.0	45.5	23.3	5.0	14 41.3
	28		W.	N.	19 2 58.5	37.0	17.7	55.0	32.5	11.7	49.0	S.	40.7	13.3	. .	18.0	47.0	18.5	12 46.0
4	29	α Lyræ . . .	E.	N.	18 4 53.5	22.5	54.0	23.0	54.5	26.5	56.5	S.	1.0	34.0	13.0	51.5	28.0	9.5	14 50.0
	30		W.	S.	19 2 52.5	32.5	15.0	50.5	30.0	7.5	40.5	N.	48.5	18.5	50.5	22.0	51.5	21.5	12 51.0
7	31	α Lyræ . . .	E.	S.	18 5 1.5	28.0	58.5	29.0	59.7	33.0	6.5	N.	0.0	36.5	16.0	52.5	30.0	11.5	14 48.5
	32		W.	N.	19 3 11.0	48.0	28.5	6.3	43.0	22.7	59.7	S.	52.7	25.5	59.0	29.0	59.0	. .	12 57.0
8	33	α Lyræ . . .	E.	N.	18 4 59.5	28.0	0.5	28.5	0.0	33.0	2.5	S.	5.5	39.5	16.5	55.0	32.0	13.5	14 54.0
	34		W.		19 3 7.0	48.0	28.0	4.5	44.0	22.0	54.5	N.	57.5	28.0	58.5	31.0	1.0	31.0	13 0.0
10	35	α Lyræ . . .	E.	N.	18 4 56.5	26.5	57.7	25.3	57.5	28.0	0.0	S.	58.3	32.0	10.5	49.0	25.5	6.0	14 46.0
	36		W.	S.	19 3 3.0	43.0	25.0	0.7	39.7	17.5	51.0	N.	51.0	22.5	53.0	25.0	54.0	25.0	12 55.0
15	37	α Lyræ . . .	E.	S.	18 5 1.5	28.0	0.0	28.0	59.5	32.0	6.0	N.	58.5	34.5	14.0	51.0	29.0	10.0	14 48.0
	38		W.	N.	19 3 7.0	44.5	25.5	4.5	42.5	21.0	56.5	S.	49.5	22.0	56.5	27.0	56.5	26.5	12 54.0
24	39	α Lyræ . . .	E.	S.	18 5 20.0	47.3	18.3	48.3	18.5	51.7	26.0	N.	. .	53.7	33.0	11.0	48.5	29.7	15 7.0
	40		W.	N.	19 3 39.0	17.0	58.0	35.5	12.5	52.0	30.0	S.	21.0	53.0	26.7	57.3	27.0	57.0	13 26.3
26	41	α Lyræ . . .	E.	N.	18 5 22.7	53.5	24.0	53.3	24.5	57.7	27.0	S.	24.0	57.7	34.0	13.0	49.5	29.0	15 10.7
	42		W.	S.	19 3 41.0	22.3	3.0	39.0	17.7	56.0	29.0	N.	27.5	57.7	30.5	1.0	31.0	1.5	13 30.7
29	43	α Lyræ . . .	E.	S.	18 5 15.0	42.7	13.3	42.7	14.0	48.0	21.0	N.	9.7	48.3	26.7	5.0	41.7	23.0	15 1.0
	44		W.	N.	19 3 33.7	11.0	52.5	30.0	7.0	45.5	24.7	S.	12.3	46.7	18.7	49.3	19.0	50.0	13 17.3

LEVEL READINGS.				Mean, ¼ (S.–N.)	Correction for level.	Correction for azimuth.	Apparent declination.	Reduction to 1860.0.	Seconds of mean declination.	Weight.	Observer.	REMARKS.
Before reversal.		After reversal.										
N.	S.	N.	S.									
d.	d.	d.	d.	d.	"	"	° ′ "	"	° ′ "			
51.95 57.38	53.12 57.40	53.75 58.32	54.50 58.67	+ 0.48 0.09	+ 0.28	0.00	38 39 54.28	— 34.22	38 39 20.06	3	N.	
55.23 60.57	55.80 61.10	57.23 62.12	57.77 61.75	0.28 + 0.04	+ 0.16	0.00	54.30	34.12	20.18	3 3		
48.58 50.97	46.67 49.38	49.10 52.15	47.77 50.45	— 0.81 0.82	— 0.80	0.00	54.55	33.98	20.57	5 4	Ha.	
60.23 60.38	59.73 60.00	59.88 61.25	59.38 60.55	0.25 0.27	0.26	0.00	52.09	31.85	20.24	2 4	N.	
62.72 62.97	60.90 61.33	62.60 63.20	61.03 61.52	0.85 0.86	0.84	0.00	51.75	31.31	20.44	3 3	Ha.	
61.27 60.90	60.97 59.32	60.97 61.10	59.83 59.63	0.36 0.76	0.55	0.00	50.64	30.42	20.22	4 4	N.	
60.50 60.12	59.53 60.00	59.87 60.42	59.53 59.77	0.33 0.19	0.26	0.00	50.49	30.23	20.26	4 4		
63.65 67.65	62.38 66.07	63.88 70.12	64.47 65.17	0.17 1.63	0.89	0.00	50.24	29.53	20.71	3 4		
68.27 69.32	67.83 66.67	68.95 69.17	67.33 67.00	0.52 1.20	1.85	0.00	49.29	29.28	20.01	4 4		**The level was moved around the axis east and west about 2°. Change of position of bubble less than 0*d*.3 or about 0*d*.2.**
60.47 60.02	58.78 57.05	59.75 60.20	58.10 56.73	0.84 1.61	1.20	0.00	49.07	28.81	20.26	3 3	Ha.	
70.47 74.82	70.83 73.55	72.23 74.70	71.42 74.23	0.22 0.44	0.33	0.00	47.78	27.61	20.17	2 3	N.	
55.13 56.57	52.92 54.88	55.23 57.78	54.03 54.57	0.85 — 1.23	— 1.02	0.00	47.41	26.58	20.83	2 2		
54.12 51.90	55.70 53.58	53.47 51.80	55.23 52.95	+ 0.84 0.71	+ 0.76	0.00	46.45	26.29	20.16	2 2		
42.63 42.07	43.70 42.80	42.18 41.85	43.58 42.55	0.62 + 0.36	+ 0.48	0.00	46.07	25.70	20.37	4 4		
43.33 40.37	42.38 39.93	42.47 40.07	42.20 38.72	— 0.33 — 0.45	— 0.39	0.00	46.11	25.43	20.68	3 3	Ha.	
53.87 53.37	56.68 56.20	53.55 53.40	56.60 56.15	+ 1.49 1.39	+ 1.42	0.00	44.74	24.69	20.05	1½ 3	N.	
56.95 53.47	58.85 57.63	55.40 53.55	58.43 56.33	1.23 1.71	1.45	0.00	45.03	24.46	20.57	2 3	Ha.	
49.40 51.82	50.75 51.78	49.00 51.87	51.28 52.22	0.91 + 0.08	+ 0.49	0.00	44.24	23.97	20.27	2 3	N.	
50.60 50.38	48.07 47.03	50.57 49.73	47.50 47.30	— 1.40 — 1.44	— 1.40	0.00	42.89	22.44	20.45	½ 2	Ha.	
59.53 59.25	63.90 61.62	59.65 58.50	62.62 62.10	+ 1.84 1.49	+ 1.64	0.00	40.20	19.87	20.33	2 2	N.	
61.32 60.38	62.93 62.80	60.65 60.45	63.73 61.80	1.17 + 0.94	+ 1.04	0.00	39.53	19.25	20.28	2 2		
54.47 54.18	53.93 50.08	54.82 52.30	52.43 50.65	— 0.73 — 1.44	— 1.07	0.00	38 39 38.20	— 17.88	38 39 20.32	3 3		

OBSERVATIONS

WITH THE

EQUATORIAL.

1863.

OBSERVATIONS
WITH THE
EQUATORIAL.

PLEIADES.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		△ *a*	△ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
n. 19	17 *b* Electra . .	52.0	1.3	10.8	5 0 1.37	1 44.739	—2 36.03	+ 0.054	Corr. Chron. — 3 9.00
	23 *d* Merope . .	19.9	28.9	37.9	1 28.90	4 39.714	1 8.50	— 37.914	*a* *δ*
F.	*η* Tauri . . .	28.0	37.5	46.7	2 37.40	1 44.793			h. m. s. ° ′ ″
	26 *s* Pleiades . .	56.6	. .	15.0	4 5.80	5 42.209			*η* Tauri 3 39 22.83 + 23 40 50.32
	A 38 Pleiades . .	58.0	7.2	16.3	5 7.17	5 43.831			
	A. 40 Pleiades . .	51.7	0.7	9.9	6 0.77	3 46.735			*η* Tauri—17 *b* Electra,
									△ *a* △ *δ*
	17 *b* Electra . .	43.1	52.4	1.6	12 52.37	1 46.612	2 36.03	+ 0.254	h. m. s. m. s. ′ ″
	23 *d* Merope . .	10.5	19.7	29.0	14 19.73	4 41.351	—1 8.67	— 37.478	Sid. T. 5 20 3.38 — 2 36.13 + 0 3.19
	η Tauri . . .	19.4	28.3	37.5	15 28.40	1 46.866			Δρ .00 .00
	27 *f* Atlas . . .	59.7	8.9	18.1	17 8.90	2 40.714	+1 40.50	— 10.979	*M.*— 12.77 — 40.82
									η Tauri—23 *d* Merope,
	17 *b* Electra . .	13.3	22.3	32.0	18 22.53	1 46.573	—2 36.07	+ 0.207	h. m. s.
	23 *d* Merope . .	40.9	50.3	59.4	19 50.20	4 41.388	—1 8.40	— 37.601	Sid. T. 5 20 3.38 — 1 8.56 — 9 37.50
	η Tauri . . .	49.4	58.5	7.9	20 58.60	1 46.780			Δρ .00 .17
	27 *f* Atlas . . .	29.7	39.3	48.3	22 39.10	2 40.718	+1 40.50	— 11.069	*M.* — 12.77 — 40.43
									η Tauri—27 *f* Atlas,
	17 *b* Electra . .	32.7	41.9	51.2	24 41.93	1 46.507	—2 36.30	+ 0.339	h. m. s.
	A. 7 Pleiades . .	32.2	41.2	50.4	25 41.27				Sid. T. 5 24 10.38 + 1 40.45 — 2 49.64
	23 *d* Merope . .	0.3	9.4	18.7	26 9.47	4 41.483	—1 8.76	— 37.630	Δρ .00 .05
	η Tauri . . .	8.9	18.2	27.6	27 18.23	1 46.846			*M.* — 12.81 — 1 39.75
	27 *f* Atlas . . .	49.3	58.7	7.7	28 58.57	2 40.618	+1 40.34	— 10.903	
	17 *b* Electra . .	36.6	46.3	55.6	30 46.17	1 46.550	—2 36.26	+ 0.173	
	23 *d* Merope . .	4.7	13.9	23.2	32 13.93	4 41.400	—1 8.50	— 37.670	
	η Tauri . . .	13.0	22.5	31.8	33 22.43	1 46.720			
	27 *f* Atlas . . .	53.4	2.6	12.0	35 2.67	2 40.743	+1 40.24	— 11.151	
	17 *b* Electra . .	43.9	52.9	2.6	36 53.13	1 46.500	—2 36.10	+ 0.220	
	23 *d* Merope . .	11.6	20.6	29.8	38 20.67	4 41.357	—1 8.56	— 37.630	
	η Tauri . . .	19.9	29.3	38.5	39 29.23	1 46.720			
	27 *f* Atlas . . .	0.6	9.9	19.2	41 9.90	2 40.788	+1 40.67	— 11.199	
b. 2	17 *b* Electra . .	54.1	3.2	12.6	6 15 3.30	1 40.465	—2 36.07	+ 0.165	m. s.
	23 *d* Merope . .	21.6	31.0	40.3	16 30.97	4 35.222	—1 8.40	— 37.585	Corr. Chron. — 2 58.52
F.	*η* Tauri . . .	30.2	39.3	48.6	17 39.37	1 40.630			*a* *δ*
	27 *f* Atlas . . .	10.9	19.7	29.1	20 19.90	2 34.517	+1 40.53	— 11.018	h. m. s. ° ′ ″
									η Tauri, 3 39 22.65 —23 40 50.33
	17 *b* Electra . .	22.0	31.3	40.6	21 31.30	1 40.283	—2 36.15	+ 0.222	
	23 *d* Merope . .	49.7	59.0	8.3	22 59.00	4 35.133	—1 8.45	— 37.621	*η* Tauri—17 *b* Electra,
	η Tauri . . .	58.2	. .	16.7	24 7.45	1 40.505			△*a* △*δ*
	27 *f* Atlas . . .	38.5	48.0	57.4	25 47.97	2 34.421	+1 40.52	— 11.050	h. m. s.
									Sid. T. 6 26 24.28 — 2 36.11 + 0 3.24
	17 *b* Electra . .	44.7	53.7	3.1	26 53.83	1 40.248	—2 35.97	+ 0.194	Δρ .00 .00
	23 *d* Merope . .	12.3	21.4	30.6	28 21.43	4 35.160	—1 8.37	— 37.711	*M.* — 12.60 — 40.85
	η Tauri . . .	20.7	29.7	39.0	29 29.80	1 40.442			
	27 *f* Atlas . . .	1.1	10.1	19.6	31 10.27	2 34.391	+1 40.47	— 11.080	*η* Tauri—23 *d* Merope,
									h. m. s.
	17 *b* Electra . .	6.7	15.7	25.0	32 15.80	1 40.256	—2 36.17	+ 0.256	Sid. T. 6 26 24.28 — 1 8.42 — 9 37.38
	23 *d* Merope . .	34.4	43.6	52.6	33 43.53	4 35.111	—1 8.44	— 37.592	Δρ .00 .19
	η Tauri . . .	42.7	51.9	1.3	34 51.97	1 40.512			*M.* — 12.60 — 40.46
	27 *f* Atlas . . .	23.6	32.7	42.1	36 32.80	2 34.409	+1 40.83	— 11.028	
									η Tauri—27 *f* Atlas,
	17 *b* Electra . .	0.3	9.3	18.6	38 9.40	1 40.138	—2 36.03	+ 0.220	h. m. s.
	23 *d* Merope . .	27.6	37.2	46.1	39 36.97	4 35.080	—1 8.46	— 37.715	Sid T. 6 26 24.28 + 1 40.64 — 2 49.93
	η Tauri . . .	36.1	45.6	54.6	40 45.93	1 40.358			Δρ .00 .05
	27 *f* Atlas . . .	17.0	26.2	35.6	42 26.27	2 34.450	+1 40.84	— 11.223	*M.* — 12.64 — 39.78
									m. s.
r. 2	16 *g* Celæno . .	1.2	10.0	19.6	46 10.27	2 35.770	—2 41.56	+ 41.494	Corr. Chron. + 1 49.48
	A. 7 . . .	5.9	15.1	24.3	47 15.10	5 51.108	—1 36.73	— 16.714	*a* *δ*
F.	*η* Tauri . . .	42.6	51.7	1.2	48 51.83	4 51.402			h. m. s. ° ′ ″
	28 *h* Pleione . .	24.2	33.3	42.6	50 33.37	4 42.942	+1 41.54	+ 8.460	*η* Tauri 3 39 22.16 + 23 40 48.98

(Continued.)

PLEIADES.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Mar. 2	16 *g* Celæno . .	17.7	26.7	36.2	6 52 26.87	2 35.672	—2 41.43	+ 41.603	η Tauri—16 *g* Celæno,
	A 7 . . .	22.6	31.6	40.7	53 31.63	5 50.900	—1 36.77	— 16.495	Δα Δδ
F.	η Tauri . . .	59.1	8.3	17.5	55 8.30	4 51.413			h. m. s. m. s. ′ ″
	28 *h* Pleione . .	40.7	49.9	59.2	56 49.93	3 55.982	+1 41.63	+ 8.508	Sid. T. 6 57 15.20 — 2 41.47 +10 37.25
									δ .00 .23
	16 *g* Celæno . .	26.4	35.5	44.9	59 35.60	2 35 652	—2 41.43	+ 41.551	*M.* — 12.13 — 39.61
	A. 7 . . .	31.3	40.4	49.3	7 0 40.37	5 50 859	—1 36.66	— 16.526	η Tauri—A. 7,
	η Tauri . . .	7.8	17.0	26.3	2 17.03	4 51 341			Δ α Δ δ
	28 *h* Pleione . .	49.3	58.6	7.7	3 58.53	4 42 707	+1 41.50	+ 8.634	h. m. s. m. s. ′ ″
									Sid. T. 6 57 15.20 — 1 36.72 — 4 14.26
									ρ .00 .09
									M. — 12.12 — 39.21
									η Tauri—28 *h* Pleione,
									h. m. s.
									Sid. T. 6 57 15.20 + 1 41.56 + 2 10.89
									ρ .00 + .05
									M. — 12.16 — 38.47
Mar. 4	16 *g* Celæno . .	. .	22.8	32.4	6 17 23.02	1 40 210	—2 41 21	+ 41.435	m. s.
	A. 7 . . .	18.6	27.8	36.9	18 27.77	5 38 439	—1 36 46	— 16.795	Corr. Chron. + 1 51.69
F.	η Tauri . . .	53.0	4.3	13.4	20 4.23	4 38 652			α δ
	28 *h* Pleione . .	36.5	45.9	55.3	21 45.90	3 43 390	+1 41 67	+ 8.339	h. m. s. ° ′ ″
									η Tauri, 3 39 22.14 +23 40 48.86
	16 *g* Celæno . .	. .	. .	. .	. . .	1 40 235			
	A. 7 . . .	25.7	34.9	44.3	25 34.97	5 38 481	—1 36.56	— 16.676	η Tauri—16 *g* Celæno,
	η Tauri . . .	2.4	11.6	20.6	27 11.53	4 38 813			Δ α Δ δ
	28 *h* Pleione . .	43.9	53.2	2.5	28 53.20	3 43 349	+1 41.67	+ 8.541	h. m. s. m. s. ′ ″
									Sid. T. 6 55 6.78 — 2 41.24 +10 37.96
	16 *g* Celæno . .	10.4	19.6	28.7	32 19.57	1 40 212	—2 41.26	+ 41.568	ρ .00 + .22
	A. 7 . . .	15.1	24.3	33.3	33 24.23	5 38 440	—1 36.60	— 16.661	*M.* — 12.09 — 39.47
	η Tauri . . .	51.5	0.9	10.1	35 0.83	4 38.787			η Tauri—A. 7,
	28 *h* Pleione . .	33.3	42.5	51.6	36 42.47	3 43.332	+1 41.64	+ 8.532	h. m. s.
									Sid. T. 6 52 30.43 — 1 36.55 — 4 15.05
	16 *g* Celæno . .	34.5	43.6	53.2	38 43.77	1 40.099	—2 41.03	+ 41.525	ρ .00 .09
	A. 7 . . .	39.0	48.2	57.5	39 48.23	5 38.293	—1 36.57	— 16.670	*M.* — 12.09 — 39.08
	η Tauri . . .	15.6	24.9	33.9	41 24.80	4 38.631			η Tauri—28 *h* Pleione,
	28 *h* Pleione . .	57.3	6.6	16.0	43 6.63	3 43.279	+1 41.83	+ 8.429	h. m. s.
									Sid. T. 6 52 30.43 + 1 41.63 +2 10.87
	16 *g* Celæno . .	55.9	4.9	14.2	44 4.87	1 40.011	—2 41.40	+ 41.682	ρ .00 + .05
	A. 7 . . .	0.3	9.6	19.0	45 9.63	5 38.272	—1 36.64	— 16.580	*M.* — 12.13 — 38.33
	η Tauri . . .	36.9	46.3	53.6	46 46.27	4 38.700			
	28 *h* Pleione . .	18.6	28.0	37.3	48 27.97	3 43.251	+1 41.70	+ 8.526	
	16 *g* Celæno . .	7.3	16.3	25.7	51 16.43	1 39.925	—2 41.24	+ 41.650	
	A. 7 . . .	11.9	21.0	30.2	52 21.03	5 38.104	—1 36.64	— 16.530	
	η Tauri . . .	48.4	57.6	7.0	53 57.67	4 38.582			
	28 *h* Pleione . .	30.1	39.4	48.9	55 39.47	3 43.128	+1 41.80	+ 8.531	
	16 *g* Celæno . .	53.7	2.7	12.0	58 2.80	1 39.844	—2 41.23	+ 41.589	
	A. 7 . . .	. .	7.6	16.6	59 7.55	5 38.116	—1 36.48	— 16.684	
	η Tauri . . .	34.9	43.9	53.3	7 0 44.03	4 38.440			
	28 *h* Pleione . .	16.5	25.7	35.0	2 25.73	3 42.890	+1 41.70	+ 8.627	
	16 *g* Celæno . .	9.3	18.3	27.8	4 18.07	1 39.741	—2 41.56	+ 41.663	
	A. 7 . . .	13.9	23.0	32.4	5 23.10	5 37.990	—1 36.53	— 16.587	
	η Tauri . . .	50.5	59.7	8.7	6 59.63	4 38.411			
	28 *h* Pleione . .	32.1	41.3	50.6	8 41.33	3 42.942	+1 41.70	+ 8.546	
	16 *g* Celæno . .	33.7	42.7	52.0	11 42.80	1 39.583	—2 41.10	+ 41.683	
	A. 7 . . .	38.3	47.3	56.5	12 47.37	5 37.800	—1 36.53	— 16.535	
	η Tauri . . .	14.7	23.7	33.3	14 23.90	4 38.273			
	28 *h* Pleione . .	56.2	5.7	14.9	16 5.60	3 42.662	+1 41.70	+ 8.688	
	16 *g* Celæno . .	4.2	13.2	22.7	17 13.37	1 39.553	—2 41.10	+ 41.570	
	A. 7 . . .	8.7	18.2	27.1	18 18.00	5 37.708	—1 36.47	— 16.586	
	η Tauri . . .	45.2	54.6	3.6	19 54.47	4 38.130			
	28 *h* Pleione . .	26.6	36.3	45.4	21 36.10	3 42.650	+1 41.63	+ 8.557	
									m. s.
Mar. 5	16 *g* Celæno . .	10.1	19.2	28.5	5 52 19.23	4 38.903	—2 40.57	+ 41.448	Corr. Chron. + 1 54.13
	η Tauri . . .	50.6	59.8	9.0	54 59.80	1 40.448			α δ h. m. s. ° ′ ″
H.	28 *h* Pleione . .	32.2	41.6	50.9	56 41.57	1 48.944	+1 41.77	+ 8.496	η Tauri, 3 39 22.12 +23 40 48.80

(Continued.)

PLEIADES.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
363.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
ar. 5	16 *g* Celæno	37.2	46.3	55.8	6 0 46.43	4 38.660	—2 40.70	+ 41.453	*η* Tauri—Celæno,
	η Tauri	17.8	27.1	36.5	3 27.13	1 40.200			△ α △ δ
H.	28 *h* Pleione	59.7	9.0	. .	5 8.98				h. m. s. m. s. ′ ″
									Sid. T. 6 16 56.62 — 2 40.61 +10 35.79
	16 *g* Celæno	38.6	47.5	56.9	8 47.67	4 38.782	—2 40.53	41.392	ρ .00 + .21
	η Tauri	19.0	28.2	37.4	11 28.20	1 40.383			*M.*— 12.07 — 39.40
	28 *h* Pleione	. .	10.0	19.2	13 9.96	2 31.571	+1 41.76	8.319	*η* Tauri—28 *h*. Pleione,
									h. m. s.
	16 *g* Celæno	9.6	19.0	28.1	17 18.90	4 38.749	—2 40.67	41.408	Sid. T. 6 19 15.70 + 1 41.78 + 2 8.71
	η Tauri	50.3	59.6	8.8	19 59.57	1 40.334			ρ .00 + .04
	Pleione	32.0	41.3	50.6	21 41.30	2 31.604	+1 41.73	8.401	*M.*— 12.11 — 38.31
									η Tauri—Electra,
	16 *g* Celæno	45.1	54.3	3.8	23 54.40	4 38.849	—2 40.57	41.510	h. m. s.
	η Tauri	25.7	35.0	44.2	26 34.97	1 40.332			Sid. T. 6 48 55.88 — 2 36.02 + 0 3.82
	Pleione	7.5	16.9	26.1	28 16.83	2 31.591	+1 41.86	8.390	ρ .00 .00
									M.— 12.06 — 39.28
	16 *g* Celæno	55.4	4.7	14.0	31 4.70	4 38.846	—2 40.60	41.512	*η* Tauri—A. 11,
	η Tauri	36.1	45.2	54.6	33 45.30	1 40.327			h. m. s.
	Pleione	17.9	27.1	36.3	35 27.10	2 31.652	+1 41.80	8.356	Sid. T. 6 48 55.88 — 0 49.43 — 0 16.33
									ρ .00
	17 *b* Electra	18.1	27.5	36.7	42 27.43	3 45.605	—2 36.00	+ 0.249	*M.*— 12.07 — 38.88
	A. 11	. .	14.0	23.1	44 13.93	3 44.313	0 49.50	— 1.043	
	η Tauri	54.2	3.3	12.8	45 3.43	3 45.356			
	17 *b* Electra	15.0	24.0	33.1	46 24.03	3 45.677	2 36.04	+ 0.249	
	A. 11	1.4	10.7	20.0	48 10.70	3 44.380	0 49.37	— 1.048	
	η Tauri	51.0	0.0	9.2	49 0.07	3 45.428			
	Electra	15.8	24.8	34.1	50 24.90	3 45.689			
	A. 11	2.1	11.3	20.7	52 11.33	3 44.440			
	η Tauri	. .	. .	. .	. . . .	3 45.460			
									m. s.
ar. 9	17 *b* Electra	56.1	5.3	14.6	7 33 5.33	2 31.420	2 35.94	+ 0.390	Corr. Chron. + 2 4.05
	23 *d* Merope	23.6	32.6	42.1	34 32.77	5 26.540	1 8.50	— 37.600	α δ
F.	*η* Tauri	. .	41 3	50.4	35 41.27	2 31.810			h. m. s. ° ′ ″
									η Tauri, 3 39 22.05 +23 40 48.55
	17 *b* Electra	33.3	42.3	51.8	38 42.47	2 31.428	2 36.00	+ 0.277	
	23 *d* Merope	. .	9.9	19.1	40 9.92	5 26.362	1 8.55	— 37.527	*η* Tauri—17 *b* Electra,
	η Tauri	9.3	18.3	27.8	42 18.47	2 31.705			△ α △ δ
									h. m. s. m. s. ′ ″
	Electra	49.4	58.6	7.8	42 58.60	2 31.341	2 36.07	+ 0.228	Sid. T. 7 47 28.53 — 2 36.01 + 0 4.49
	A. 1	. .	32.2	41.6	43.32.30	3 36.568	2 2.37	— 17.784	ρ .00 .00
	Merope	. .	25.9	35.2	44 25.95	4 43.311	1 8.72	— 37.604	*M.*— 12.00 — 39.03
	η Tauri	25.6	34.6	43.8	45 34.67	2 31.569			*η* Tauri—Merope,
									h. m. s.
	Electra	43.7	52.7	1.9	46 52.77	2 31.108	2 35.96	+ 0.302	Sid. T. 7 47 28.53 — 1 8.55 — 9 35.86
	A. 1	. .	26.8	35.6	47 26.67	3 36.461	2 2.56	— 17.836	ρ .00 .25
	Merope	11.2	20.3	29.3	48 20.27	5 26.081	1 8.46	— 37.341	*M.*— 11.99 — 38.65
	η Tauri	19.6	28.5	38.1	49 28.73	2 31.410			*η* Tauri—A. 1,
									h. m. s.
	Electra	13.9	23.2	32.5	51 23.20	2 30.970	2 36.07	+ 0.271	Sid. T. 7 49 35.75 — 2 2.21 — 4 33.15
	Merope	41.5	50.7	0.1	52 50.77	5 26.023	1 8.50	— 37.652	ρ .00 .11
	η Tauri	50.1	59.2	8.5	53 59.27	2 31.241			*M.*— 11.99 — 38.92
									m. s.
ar. 13	16 *g* Celæno	10.1	19.4	28.7	7 4 19.40	1 40.999	2 40.83	+ 41.613	Corr. Chron. + 2 3.29
	A. 8	35.7	44.9	54.3	5 44.97	2 45.155	1 15.26	20.326	α δ
F.	*η* Tauri	51.1	0.3	9.3	7 0.23	4 39.619			h. m. s. ° ′ ″
									η Tauri, 3 39 21.99 +23 40 48.29
	16 *g* Celæno	52.1	1.2	10.5	9 1.27	1 40.949	2 40.66	41.500	
	A. 8	17.5	26.7	36.2	10 26.80	2 44.991	1 15.13	20.327	*η* Tauri—16 *g* Celæno,
	A. 9	19.7	29.0	38.3	10 29.00				△ α △ δ
	η Tauri	32.6	41.9	51.3	11 41.93	4 39.456			h. m. s. m. s. ′ ″
									Sid. T. 7 29 11.93 — 2 40.82 +10 38.24
	16 *g* Celæno	57.6	6.6	16.2	14 6.80	1 40.831	2 40.67	41.659	ρ .00 + .25
	A. 8	23.0	32.2	41.6	15 32.27	2 44.888	1 15.20	20.471	*M.*— 11.94 — 38.88
	A. 9	25.2	34.5	43.8	15 34.50				*η* Tauri—A. 8,
	η Tauri	38.2	47.6	56.6	16 47.47	4 39.497			h. m. s.
									Sid. T. 7 24 56.33 — 1 15.21 + 5 13.00
	16 *g* Celæno	47.6	56.7	6.0	17 56.77	1 40.735	2 40.83	41.646	ρ .00 + .12
	A. 8	13.3	22.5	31.8	19 22.53	2 44.842	—1 15.07	+ 20.408	*M.*— 11.95 — 38.51
	A. 9	15.6	24.7	33.9	19 24.73				(Continued.)
	η Tauri	28.3	37.6	46.9	20 37.60	4 39.388			

PLEIADES.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	STARS. Δ α	Δ mic.	RESULTS.
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1863. Mar. 13	16 *g* Celæno . .	10.3	19.3	28.7	7 22 19.43	1 40.648	—2 40.87	+ 41.600	η Tauri—A. 9,
	A. 8 . . .	35.9	45.0	54.3	23 45.07	2 44.698	1 15.23	20.419	Δ α Δ δ
	A. 9 . . .	38.3	47.5	56.7	23 47.50				h. m. s. m. s. ′ ″
F.	η Tauri . .	51.0	0.4	9.5	25 0.30	4 39.255			Sid. T. 7 46 14.32 — 1 12.94 + 4 54.16
	16 *g* Celæno . .	16.6	25.7	35.3	7 27 25.87	1 40.603	2 41.00	41.621	ρ .00 0.11
	A. 8 . . .	42.3	51.6	0.7	29 51.53	2 44.683	1 15.34	20.410	*M.* — 11.95 — 38.49
	A. 9 . . .	. .	53.8	3.0	29 53.78				
	η Tauri . . .	57.6	6.9	16.1	30 6.87	4 39.231			
	16 *g* Celæno . .	3.0	12.3	21.3	31 12.20	1 40.568	2 40.90	41.650	
	A. 8 . . .	28.7	37.7	47.3	32 37.90	2 44.583	1 15.20	20.504	
	A. 9 . . .	30.9	40.2	49.4	32 40.17				
	η Tauri . . .	43.9	53.1	2.3	33 53.10	4 39.225			
	16 *g* Celæno . .	57.0	6.2	15.6	35 6.27	1 40.491	2 40.76	41.607	
	A. 8 . . .	22.4	31.7	41.2	36 31.77	2 44.568	1 15.26	20.397	
	A. 9 . . .	24.9	34.1	43.4	36 34.13				
	η Tauri . . .	37.6	47.1	56.4	37 47.03	4 39.105			
	16 *g* Celæno . .	59.3	8.5	17.6	40 8.47	1 40.349	2 40.83	41.636	
	A. 8 . . .	24.9	34.0	43.3	41 34.03				
	A. 9 . . .	27.2	36.3	45.6	41 36.37	2 45.711	1 12.93	18.143	
	η Tauri . . .	40.0	49.5	58.4	42 49.30	4 38.992			
	16 *g* Celæno . .	42.6	51.9	1.3	42 51.93	1 40.251	2 40.84	41.596	
	A. 8 . . .	8.3	17.4	26.8	44 17.50				
	A. 9 . . .	10.6	19.7	29.2	44 19.83	2 45.519	1 12.94	18.203	
	η Tauri . . .	23.6	32.7	41.9	45 32.77	4 38.860			
Oct. 26	A. 8 . . .	41.2 45.4	. . 54.4	7.9 3.4	23 9 54.46	3 44.358	—1 15.24	+ 20.361	m. s. Corr. Chron. + 3 40.58
F.	η Tauri . . .	56.6 0.6	. . 9.6	23.0 18.7	11 9.70	4 51.642			α δ h. m. s. ° ′ ″
	A. 9 . . .	1.9 6.2	. . 15.1	28.6 24.1	12 15.18	3 46.125	+1 5.48	18.594	η Tauri, 3 39 25.96 +23 40 57.32
	A. 8 . . .	30.2 34.3	. . 43.3	56.8 52.4	13 43.40	3 44.502	—1 15.10	20.450	A. 8—η Tauri, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 23 41 37.32 — 1 15.23 + 5 13.79
	η Tauri . . .	45.2 49.3	. . 58.6	11.8 7.6	14 58.50	4 51.875			Δ ρ .00 + .13 *M.* — 15.93 — 47.54
	A. 9 . . .	. . 54.9	. . 3.8	17.7 13.0	16 3.90	3 46.242	+1 5.40	18.710	A. 41—η Tauri, h. m. s.
	A. 8 . . .	14.3 18.4	. . 27.4	40.7 36.3	17 27.42	3 44.586	—1 15.20	20.452	Sid. T. 23 42 47.11 + 1 5.45 + 4 45.61 Δ ρ .00 + .11 *M.* — 15.94 — 46.75
	η Tauri . . .	29.5 33.6	. . 42.6	55.8 51.6	18 42.62	4 51.961			A. 9—η Tauri, h. m. s.
	A. 9 . . .	35.1 39.4	. . 48.1	1.6 57.1	19 48.26	3 46.542	+1 5.64	18.496	Sid. T. 0 28 8.00 — 1 12.82 + 4 52.88 Δ ρ .00 + .10 *M.* — 15.93 — 47.55
	A. 8 . . .	50.5 54.6	. . 3.3	17.2 12.6	21 3.64	3 44.832	—1 15.20	20.315	Pleione—η Tauri, h. m. s.
	η Tauri . . .	5.6 9.7	. . 18.8	32.2 27.9	22 18.84	4 52.070			Sid. T. 0 28 8.00 + 1 41.79 + 2 10.16 Δ ρ .00 + .04 *M.* — 15.94 — 46.55
	A. 8 . . .	28.6 32.8	. . 41.6	55.1 50.6	24 41.74	3 44.810	—1 15.06	20.628	
	η Tauri . . .	43.6 47.9	. . 56.6	10.1 5.8	25 56.80	4 52.361			
	A. 41 . . .	48.9 53.2	. . 2.2	15.7 11.5	27 2.30	3 46.669	+1 5.50	18.769	
	A. 8 . . .	41.5 45.7	. . 54.6	8.2 3.9	30 54.78	3 45.073	—1 15.12	20.514	
	η Tauri . . .	56.7 0.8	. . 9.9	23.2 18.9	32 9.90	4 52.510			
	A. 41 . . .	2.1 6.3	. . 15.4	28.7 24.5	33 15.40	3 46.952	+1 5.50	18.635	(Continued.)

PLEIADES.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	STARS. Δ α	Δ mic.	RESULTS.
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
63. t. 26	A. 8 . . .	15.8 19.9	. . 28.9	42.3 38.1	23 34 29.00	3 45.246	—1 15.26	+ 20.440	
	η Tauri . . .	31.1 35.3	. . 44.1	57.6 53.2	35 44.26	4 52.609			
F.	A. 41 . . .	36.4 40.5	. . 49.6	3.2 58.8	36 49.70	3 47.082	+1 5.44	18.604	
	A. 8 . . .	35.3 39.4	. . 48.4	1.8 57.5	54 48.48	3 45.602	—1 15.20	20.426	
	η Tauri . . .	50.6 54.7	. . 3.6	16.9 12.6	56 3.68	4 52.951			
	A 41 . . .	55.8 59.9	. . 8.9	22.6 18.2	57 9.08	3 47.439	+1 5.40	18.589	
	A. 8 . . .	14.6 18.8	. . 27.9	41.4 36.9	59 27.92	3 45.706	—1 15.34	20.499	
	η Tauri . . .	29.9 34.4	. . 43.3	56.6 52.1	0 0 43.26	4 53.128			
	A. 41 . . .	35.3 39.3	. . 48.6	2.2 57.5	1 48.58	3 47.610	+1 5.32	18.595	
	A. 8 . . .	58.5 2.6	. . 11.6	24.9 20.5	3 11.62	3 45.811	—1 15.22	20.446	
	η Tauri . . .	13.5 18.1	. . 26.9	40.1 35.6	4 26.84	4 53.180			
	A. 41 . . .	18.9 23.3	. . 32.2	45.6 41.4	5 32.28	3 47.656	+1 5.44	18.601	
	A. 8 . . .	27.9 32.1	. . 40.9	54.5 50.1	6 41.10	3 45.899	—1 15.42	20.508	
	η Tauri . . .	43.4 47.4	. . 56.4	9.8 5.6	7 56.52	4 53.330			
	A. 9.2 . .	48.8 52.8	. . 1.8	15.4 10.9	10 1.94	3 47.776	+1 5.42	18.631	
	A. 9 . . .	0.7 4.8	. . 14.1	27.7 23.3	13 14.12	3 47.281	—1 12.80	19.108	
	η Tauri . . .	13.7 17.8	. . 26.9	40.3 35.9	14 26.92	4 53.312			
	28 *h* Pleione . .	55.0 59.6	. . 8.7	22.1 17.6	16 8.60	4 44.799	+1 41.68	8.513	
	A. 9 . . .	58.5 2.8	. . 11.7	25.2 20.8	26 11.80	3 47.840	—1 12.78	18.948	
	η Tauri . . .	11.5 15.6	. . 24.9	37.1 33.8	27 24.58	4 53.711			
	28 *h* Pleione . .	53.1 57.4	. . 6.5	19.9 15.6	29 6.50	4 45.249	+1 41.92	8.462	
	A. 9 . . .	4.7 8.8	. . 17.8	31.3 26.8	30 17.88	3 47.705	—1 12.88	19.232	
	η Tauri . . .	17.6 21.7	. . 30.6	44.1 39.8	31 30.76	4 53.860			
	28 *h* Pleione . .	59.3 3.5	. . 12.6	25.7 21.6	33 12.54	4 45.378	+1 41.78	8.482	
t. 27	17 *b* Electra . .	28.9	37.9	47.0	0 25 37.93	3 44.719	—2 35.94	0.246	m. s. Corr. Chron. + 3 41.02
	η Tauri . . .	4.8	13.8	23.0	28 13.87	3 44.965			α δ h. m. s. ° ′ ″
H.	17 *b* Electra . .	25.9	34.7	44.0	34 34.87	3 44.910	2 36.10	+ 0.293	η Tauri, 3 39 25.98 +23 40 57.40
	A. 11 . . .	12.3	21.4	30.6	36 21.43	3 46.180	—0 49.54	— 0.977	
	η Tauri . . .	2.0	10.9	20.0	37 10.97	3 45.203			17 *b* Electra—η Tauri,
	28 *h* Pleione . .	43.6	52.6	1.7	38 52.63	3 36.739	+1 41.66	+ 8.464	Δ α Δ δ h. m. s. m. s. ′ ″
	17 *b* Electra . .	13.6	22.4	31.7	41 22.57	3 45.104	—2 36.06	+ 0.232	Sid. T. 0 43 9.18 — 2 36.03 + 0 4.23
	A. 11 . . .	0.0	9.1	18.2	43 9.10	3 46.405	—0 49.53	— 1.069	Δ ρ 0.00 0.00
	η Tauri . . .	49.6	58.6	7.7	43 58.63	3 45.336			*M*. — 15.94 — 48.17
	28 *h* Pleione . .	31.3	40.2	49.3	45 40.27	3 36.908	+1 41.64	+ 8.428	A. 11—η Tauri, h. m. s.
	17 *b* Electra . .	24.4	33.4	42.5	47 33.43	3 45.241	—2 36.00	+ 0.330	Sid. T. 0 46 53.01 — 0 49.54 — 0 15.33
	A. 11 . . .	11.0	20.0	29.0	49 20.00	3 46.509	—0 49.43	— 0.938	Δ ρ 0.00 0.00
	η Tauri . . .	0.3	9.4	18.6	50 9.43	3 45.571			*M*. — 15.95 — 47.58
	28 *h* Pleione . .	42.1	51.1	0.3	51 51.17	3 37.032	+1 41.74	+ 8.539	(Continued.)

PLEIADES.

E.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.	
		A.	B.	C.	Mean.		Δ α	Δ mic.
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.
27	17 *b* Electra . .	27.9	36.9	46.0	0 53 36.93	3 45.409	+2 36.07	+ 0.276
	A. 11 . . .	. .	23.3	32.4	55 23.33	3 46.701	—0 49.67	— 1.016
	η Tauri . . .	4.0	13.0	22.0	56 13.00	3 45.685		
	28 *h* Pleione . .	45.6	54.7	3.7	57 54.67	3 37.204	+1 41.67	+ 8.481
29	17 *b* Electra . .	22.6	31.7	40.6	0 18 31.63	3 46.175	—2 36.10	+ 0.347
	A. 11 . . .	9.1	18.1	27.3	20 18.17	3 47.520	0 49.56	— 0.998
	η Tauri . . .	58.7	7.7	16.8	21 7.73	3 46.522		
	17 *b* Electra . .	59.1	8.2	17.2	24 8.17	3 46.359	2 36.00	+ 0.322
	A. 11 . . .	45.6	54.7	3.9	25 54.73	3 47.640	—0 49.44	— 0.959
	η Tauri . . .	35.2	44.1	53.2	26 44.17	3 46.681		
	27 *f* Atlas . . .	15.7	24.8	33.9	28 24.80	4 44.761	+1 40.63	— 11.157
	17 *b* Electra . .	46.4	55.5	4.5	29 55.47	3 46.531	—2 36.03	+ 0.318
	A. 11 . . .	32.9	42.0	51.0	31 41.97	3 47.790	—0 49.53	— 0.941
	η Tauri . . .	22.5	31.4	40.6	32 31.50	3 46.849		
	27 *f* Atlas . . .	3.0	12.0	21.1	34 12.03	4 44.910	+1 40.53	— 11.138
	17 *b* Electra . .	50.7	59.7	8.9	35 59.77	3 46.739	—2 36.03	+ 0.279
	A. 11 . . .	37.2	46.2	55.3	37 46.23	3 47.946	—0 49.57	— 0.928
	η Tauri . . .	26.8	35.7	44.9	38 35.80	3 47.018		
	27 *f* Atlas . . .	7.2	16.2	25.3	40 16.23	4 45.077	+1 40.43	— 11.136
	17 *b* Electra . .	39.2	48.2	57.2	41 48.20	3 46.794	—2 35.97	+ 0.270
	A. 11 . . .	25.7	34.8	44.0	43 34.83	3 48.064	—0 49.34	— 1.000
	η Tauri . . .	15.2	24.1	33.2	44 24.17	3 47.064		
	27 *f* Atlas . . .	55.7	4.7	13.8	46 4.73	4 45.140	+1 40.56	— 11.153
	17 *b* Electra . .	22.8	32.0	41.0	48 31.93	3 47.024	—2 36.04	+ 0.237
	A. 11 . . .	9.4	18.5	27.4	50 18.43	3 48.240	—0 49.54	— 0.979
	η Tauri . . .	59.0	7.9	17.0	51 7.97	3 47.261		
	27 *f* Atlas . . .	39.4	48.3	57.4	52 48.37	4 45.299	+1 40.40	— 11.115
	16 *g* Celæno . .	41.9	50.9	0.0	58 50.93	1 49.659	—2 40.87	+ 41.667
	η Tauri . . .	22.8	31.8	40.8	1 1 31.80	4 48.333		
	28 *b* Pleione . .	4.5	13.4	22.6	3 13.50	4 39.820	+1 41.70	8.513
	16 *g* Celæno . .	8.0	17.1	26.2	5 17.10	1 49.836	—2 40.93	41.591
	η Tauri . . .	49.0	58.0	7.1	7 58.03	4 48.434		
	28 *h* Pleione . .	30.8	39.9	49.0	9 39.90	4 39.885	+1 41.87	8.549
	16 *g* Celæno . .	51.2	0.3	9.3	12 0.27	1 49.921	—2 40.83	41.612
	η Tauri . . .	32.1	41.1	50.1	14 41.10	4 48.540		
	28 *h* Pleione . .	13.8	22.7	32.0	16 22.83	4 40.029	+1 41.73	8.511
	16 *g* Celæno . .	31.4	40.4	49.5	18 40.43	1 50.074	—2 40.94	41.596
	η Tauri . . .	12.5	21.3	30.3	21 21.37	4 48.677		
	28 *h* Pleione . .	54.0	3.0	12.0	23 3.00	4 40.176	+1 41.63	8.501
	16 *g* Celæno . .	42.6	51.6	0.7	24 51.63	1 50.154	—2 40.97	41.676
	η Tauri . . .	23.5	32.6	41.7	27 32.60	4 48.837		
	28 *h* Pleione . .	5.2	14.2	23.2	29 14.20	4 40.279	+1 41.60	8.558
	16 *g* Celæno . .	58.7	7.4	16.8	35 7.63	3 44.409		
	A. 24 . . .	39.3	48.4	51.6	37 48.43	3 42.939	+2 40.80	1.470
	16 *g* Celæno . .	49.0	58.0	7.1	40 58.03	3 44.491		
	A. 24 . . .	29.8	38.8	48.0	43 38.87	3 42.949	2 40.84	+ 1.542
	A. 33 . . .	26.1	35.0	44.1	45 35.07	3 51.298	4 37.04	— 6.807
	16 *g* Celæno . .	23.2	32.3	41.4	47 32.30	3 44.623		
	A. 24 . . .	4.0	13.0	22.1	50 13.03	3 43.101	2 40.73	+ 1.522
	A. 33 . . .	0.3	9.2	18.4	52 9.30	3 51.415	+4 37.00	— 6.792
11	16 *g* Celæno . .	44.6	53.5	2.7	23 42 53.60	2 43.963	—2 40.73	+ 41.554
	η Tauri . . .	25.3	34.3	43.4	45 34.33	5 42.647		
	28 *h* Pleione . .	7.2	16.1	25.2	47 16.17	4 51.127	+1 41.84	8.528
	16 *g* Celæno . .	8.3	17.2	26.4	49 17.30	2 44.056	—2 40.70	41.610
	η Tauri . . .	49.0	58.0	7.0	51 58.00	5 42.786		
	[illegible]ione . .	30.7	39.7	48.9	53 39.77	4 51.273	+1 41.77	8.521

RESULTS.

28 *h* Pleione—η Tauri,

	h. m. s.	Δ α m. s.	Δ δ ′ ″
Sid. T.	0 46 53.01	+ 1 41.68	+ 2 10.02
Δ ρ		0.00	+ 0.02
M.		— 15.96	— 46.73

Corr. Chron. + 3 41.54 (m. s.)

	α h. m. s.	δ ° ′ ″
η Tauri,	3 39 26.02	+23 40 57.53

17 *b* Electra—η Tauri,

	h. m. s.	Δ α m. s.	Δ δ ′ ″
Sid. T.	0 35 45.22	— 2 36.03	+ 0 4.52
Δ ρ		0.00	0.00
M.		— 15.98	— 48.30

A. 11—η Tauri,

	h. m. s.		
Sid. T.	0 35 45.22	— 0 49.50	— 0 14.84
Δ ρ		0.00	0.00
M.		— 15.98	— 47.70

27 *f* Atlas—η Tauri,

	h. m. s.	m. s.	′ ″
Sid. T.	0 38 40.72	+ 1 40.51	— 2 50.87
Δ ρ		0.00	0.05
M.		— 15.99	— 46.86

16 *g* Celæno—η Tauri,

	h. m. s.		
Sid. T.	1 12 37.00	— 2 40.91	+10 38.46
Δ ρ		0.00	+ 0.19
M.		15.99	— 48.30

28 *b* Pleione—η Tauri,

	h. m. s.		
Sid. T.	1 12 37.00	+ 1 41.71	+ 2 10.77
Δ ρ		0.00	+ 0.04
M.		— 16.00	— 46.84

	h. m. s.	° ′ ″
16 *g* Celæno,	3 36 45.11	+23 51 34.73

A. 24—16 *g* Celæno,

	h. m. s.	m. s.	′ ″
Sid. T.	1 44 54.19	+ 2 40.79	+ 0 23.17
Δ ρ		0.00	0.00
M.		— 16.01	— 47.40

A. 33— 16 *g* Celæno,

	h. m. s.		
Sid. T.	1 44 54.19	+ 4 37.02	— 1 44.29
Δ ρ		0.00	0.02
M.		— 16.01	— 46.76

Corr. Chron. + 3 42.56 (m. s.)

	α h. m. s.	δ ° ′ ″
η Tauri,	3 39 26.05	+23 40 57.63

(Continued.)

PLEIADES.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.	
		A.	B.	C.	Mean.		Δ α	Δ mic.
53.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.
31	16 *g* Celæno . .	0.8	9.9	19.1	23 56 9.93	2 44.256	—2 40.90	+ 41.619
	η Tauri . . .	41.8	50.8	59.9	58 50.83	5 43.005		
.	28 *h* Pleione . .	23.4	32.3	41.5	0 0 32.40	4 51.462	+1 41.57	8.551
	16 *g* Celæno . .	46.6	. .	. .	1 55.60	2 44.392	—2 40.87	41.611
	η Tauri . . .	27.5	36.4	45.5	4 36.47	5 43.133		
	28 *h* Pleione . .	9.1	18.1	27.1	6 18.10	4 51.616	+1 41.63	8.525
	16 *g* Celæno . .	5.1	14.0	23.2	9 14.10	2 44.905	—2 40.87	41.601
	η Tauri . . .	46.0	54.9	4.0	11 54.97	5 43.636		
	28 *h* Pleione . .	27.7	36.6	45.6	13 36.63	4 52.046	+1 41.66	+ 8.598
. 2	η Tauri . . .	38.4	47.3	56.2	1 1 47.30	3 44.456		
	A. 42 * . .	9.0	17.7	26.8	2 17.83	3 45.890	+0 30.53	— 1.434
F.	A. 43 * . .	16.2	25.3	34.3	2 25.27	2 48.202	0 37.97	+ 9.039
	η Tauri . . .	37.4	46.3	55.1	7 46.27	3 44.680		
	A. 42 * . .	7.6	16.3	25.6	8 16.50	3 45.900	0 30.23	— 1.220
	A. 43 * . .	15.3	24.2	33.3	8 24.27	2 48.362	0 38.00	+ 9.103
	η Tauri . .	0.6	9.6	18.8	10 9.67	3 44.699		
	A. 43 * . .	. .	. .	56.7	11 47.57	2 48.308	+0 37.90	+ 9.176
	η Tauri . . .	17.9	26.3	35.3	15 26.50	3 44.850		
	A. 43 . . .	55.7	4.7	13.9	16 4.77	2 48.312	0 38.27	9.123
	η Tauri . . .	35.2	43.9	52.9	18 44.00	3 44.863		
	A. 43 . . .	13.0	21.8	30.7	19 21.83	2 48.680	0 37.83	8.968
	η Tauri . . .	9.2	18.2	27.3	23 18.23	3 45.000		
	A. 43 . . .	47.4	56.3	5.3	23 56.33	2 48.783	0 38.10	9.002
	η Tauri . . .	52.2	1.2	10.3	26 1.23	3 45.020		
	A. 43 . . .	30.2	39.2	48.3	26 39.23	2 48.782	0 38.00	+ 9.023
	η Tauri . . .	22.9	31.9	40.8	33 31.87	3 45.042		
	A. 42 * . .	53.5	2.5	11.4	34 2.47	3 46.528	0 30.60	— 1.486
	A. 43 * . .	0.8	9.8	18.4	34 9.67	2 48.909	+0 37.80	+ 8.918
v. 3	17 *b* Electra . .	22.2	31.3	40.3	23 50 31.27	3 50.827	—2 36.10	+ 0.256
	A. 11 . . .	8.9	17.9	26.9	52 17.90	2 52.040	—0 49.47	— 0.957
H.	η Tauri . . .	58.3	7.3	16.5	53 7.37	3 51.083		
	27 *f* Atlas . .	39.0	47.9	56.8	54 47.90	4 49.166	+1 40.53	— 11.160
	17 *b* Electra . .	4.6	13.5	22.7	57 13.60	3 51.035	—2 35.97	+ 0.268
	A. 11 . . .	51.1	0.1	8.6	57 59.93	3 52.202	—0 49.64	— 0.899
	η Tauri . . .	. .	49.6	58.6	23 59 49.57	3 51.303		
	27 *f* Atlas . . .	21.1	30.1	39.0	0 1 30.07	4 49.340	+1.40.50	— 11.114
	17 *b* Electra . .	29.6	38.6	47.7	2 38.63	3 51.121	—2 36.04	+ 0.309
	A. 11 . .	16.1	25.2	34.3	4 25.20	3 52.394	—0 49.47	— 0.964
	η Tauri . . .	5.6	14.7	23.7	5 14.67	3 51.430		
	27 *f* Atlas . . .	46.2	55.1	4.2	6 55.17	4 49.513	+1 40.50	— 11.160
	17 *b* Electra . .	13.2	22.2	31.3	9 22.23	3 51.373	—2 36.00	+ 0.264
	A. 11 . . .	59.6	8.8	17.8	10 8.73	3 52.628	—0 49.50	— 0.991
	η Tauri . . .	49.2	58.2	7.3	11 58.23	3 51.637		
	27 *f* Atlas . . .	29.8	38.7	47.8	13 38.77	4 49.676	+1 40.54	— 11.116
	17 *b* Electra . .	25.2	34.2	43.3	15 34.23	3 51.524	—2 35.94	+ 0.270
	A. 11 . . .	11.7	20.5	30.0	17 20.73	3 52.739	—0 49.44	— 0.945
	η Tauri . . .	1.1	10.1	19.3	18 10.17	3 51.794		
	27 *f* Atlas . . .	41.8	50.7	59.8	19 50.77	4 49.798	+1 40.60	— 11.081
	16 *g* Celæno . .	52.7	1.8	11.0	24 1.83	1 48.867	—2 40.64	+ 41.615
	η Tauri . .	33.5	42.4	51.5	26 42.47	4 47.489		
	16 *g* Celæno . .	58.6	7.7	16.7	31 7.67	1 49.069	2 40.53	41.621
	η Tauri . .	39.2	48.1	57.3	33 48.20	4 47.697		
	16 *g* Celæno . .	49.5	58.4	7.6	34 58.50	1 49.101	2 40.60	41.626
	η Tauri . . .	30.2	39.0	48.1	37 39.10	4 47.734		

RESULTS.

			Δ α	Δ δ
28 *h* Pleione—η Tauri,				
	h. m. s.		m. s.	′ ″
Sid. T.	0 2 17.48		+ 1 41.69	+ 2 11.06
		Δ ρ	0.00	0.02
		M	— 16.03	— 46.94
16 *g* Celæno—η Tauri,				
	h. m. s.			
Sid. T.	0 2 17.48		— 2 40.81	+10 38.07
		Δ ρ	0.00	+ 0.19
		M	— 16.03	— 48.41
				m. s.
	Corr. Chron.			+ 3 43.60
	α			δ
	h. m. s.			° ′ ″
η Tauri,	3 39 26.09			+23 40 57.73
A. 42—η Tauri,			Δ α	Δ δ
	h. m. s.		m. s.	′ ″
Sid. T.	1 18 5.41		+ 0 30.49	— 0 21.17
		Δ ρ	.00	— .01
		M	16.06	— 47.35
A. 43—η Tauri,				
	h. m. s.			
Sid. T.	1 20 43.00		+ 0 37.98	+ 2 18.70
		Δ ρ	.00	+ .54
		M	16.06	— 47.31
				m. s.
	Corr. Chron.			+ 3 43.98
	α			δ
	h. m. s.			° ′ ″
η Tauri,	3 39 26.10			+23 40 57.79
17 *b* Electra—η Tauri,			Δ α	Δ δ
	h. m. s.		m. s.	′ ″
Sid. T.	0 9 23.98		— 2 36.01	+ 0 4.19
		Δ ρ	.00	0.00
		M	— 16.06	— 48.56
A. 11—η Tauri,				
	h. m. s.			
Sid. T.	0 9 23.98		— 0 49.50	— 0 14.58
		Δ ρ	0.00	0.00
		M	— 16.06	— 47.95
27 *f* Atlas—η Tauri,				
	h. m. s.			
Sid. T.	0 9 23.98		+ 1 40.53	— 2 50.65
		Δ ρ	0.00	— 0.03
		M	— 16.08	— 47.10
16 *g* Celæno—η Tauri,				
	h. m. s.			
Sid. T.	0 41 3.49		— 2 40.65	+10 38.13
		Δ ρ	0.00	+ 0.18
		M	— 16.07	— 48.58

(Continued.)

[illegible]	[illegible]	[illegible]					[illegible]				RESULTS.
					[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—1 40.7?	—	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—1 40.7?		[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	
	16 g Ceti	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	46.[illegible]				
	A 30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.[illegible]	1 38.[illegible]	—	7.[illegible]	
	A 34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2 40.7?	—	1.[illegible]	
	A 33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.[illegible]	4 36.[illegible]	—	6.[illegible]	
	16 g Ceti	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	46.[illegible]				
	A 30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 38.[illegible]	—	7.[illegible]	
	A 34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2 40.[illegible]	—	1.[illegible]	
	A 33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4 36.[illegible]	—	6.[illegible]	
	16 g Ceti	[illegible]	[illegible]	[illegible]	18 [illegible]	3	46.[illegible]				
	A 30	[illegible]	[illegible]	[illegible]	17 [illegible]	3	[illegible]	1 38.[illegible]	—	7.[illegible]	
	A 34	[illegible]	44.3	[illegible]	[illegible] 44.01	3	44.965	2 40.71	—	1.[illegible]	
	A 33	[illegible]	[illegible]	40.7	20 01.40	3	[illegible]	4 36.30	—	6.[illegible]	
	16 g Ceti	56.8	6.4	13.4	23 4.40	3	46.[illegible]				
	A 30	34.6	03.2	52.4	24 03.01	3	52.546	1 38.[illegible]	—	7.[illegible]	
	A 34	35.2	65.2	54.2	25 65.22	3	45.[illegible]	2 40.[illegible]	—	1.442	
	A 33	32.8	41.6	50.7	27 41.[illegible]	3	52.[illegible]	4 36.[illegible]	—	6.[illegible]	
	16 g Ceti	[illegible]	12.[illegible]	22.[illegible]	29 [illegible]	3	46.[illegible]				
	A 30	[illegible]	[illegible]	[illegible]	3[illegible]	3	[illegible]	1 38.[illegible]	—	7.[illegible]	
	A 34	[illegible]	[illegible]	2.8	3[illegible]	3	45.[illegible]	2 40.7[illegible]	—	1.[illegible]	
	A 33	[illegible]	[illegible]	[illegible]	[illegible]	3	52.414	4 3[illegible]	—	6.[illegible]	
	16 g Ceti	[illegible]	[illegible]	67.1	[illegible]	3	46.77[illegible]				
	A 30	[illegible]	17.6	[illegible]	[illegible]	3	[illegible]	1 38.34	—	7.[illegible]	
	A 34	[illegible]	[illegible]	[illegible]	[illegible]	3	45.[illegible]	2 40.[illegible]	—	1.4[illegible]	
	A 33	[illegible]	[illegible]	24.[illegible]	[illegible]	3	52.611	4 36.37	—	6.[illegible]	
	16 g Ceti	[illegible]	57.1	6.4	41 57.27	3	46.964				
	A 30	[illegible]	[illegible]	45.2	43 [illegible].13	3	53.992	1 38.[illegible]	—	7.0[illegible]	
	A 34	[illegible]	[illegible]	47.2	44 [illegible].07	3	45.47[illegible]	2 40.[illegible]	+	1.486	
	A 33	[illegible]	34.1	43.3	46 34.20	3	53.750	4 36.93	—	6.756	
	16 g Ceti	[illegible]	[illegible]	[illegible]	48 19.67	3	47.123				
	A 30	49.5	[illegible]	7.4	49 58.47	3	54.212	1 38.80	—	7.0[illegible]	
	A 34	51.4	0.3	9.4	50 0.37	3	45.655	2 40.70	+	1.46[illegible]	
	A 33	47.5	56.5	5.7	52 56.57	3	54.00[illegible]	+4 36.90	—	6.[illegible]5	
[illegible]	24 p	45.1	54.2	3.3	22 49 54.20	2	45.429	—0 8.03	+	2.512	
	η Tauri	53.4	2.3	11.2	50 2.23	2	47.941				
	A 44	23.7	32.6	41.7	50 32.66	2	49.115	+0 30.43	—	1.174	
	A 4[illegible]	31.2	40.3	49.3	50 40.26	1	56.033	+0 38.03	+	9.039	
	24 p	10.6	19.6	28.6	54 19.60	3	32.806	—0 8.00	+	2.492	
	η Tauri	18.7	27.5	36.6	54 27.60	3	35.298				
	A [illegible]	[illegible]	[illegible]	7.2	54 58.20	3	36.678	+0 30.60	—	1.380	
	A [illegible]	[illegible]	[illegible]	11.[illegible]	55 [illegible].57	2	39.040	+0 37.97	+	9.043	
	24 p	[illegible]	[illegible]	[illegible]	[illegible] 30.[illegible]	3	32.902	—0 8.07	+	2.610	
	η Tauri	[illegible]	[illegible]	17.[illegible]	[illegible]	3	35.512				
	A [illegible]	[illegible]	[illegible]	[illegible]	59 9.33	3	36.791	+0 30.43	—	1.279	
	A [illegible]	7.6	16.[illegible]	[illegible]	59 16.77	2	39.240	+0 37.87	+	9.057	
	24 p	36.5	45.6	54.6	3 45.57	3	33.101	—0 8.05	+	2.584	
	η Tauri	44.4	53.6		3 53.62	3	35.685				
	A 4[illegible]	15.3	24.1	33.2	4 24.20	3	36.902	+0 30.58	—	1.217	
	A 4[illegible]	[illegible]	31.6	40.6	4 31.60	2	39.479	+0 37.98	+	8.991	

α
h. m. s.
16 g Ceti. 3 36 45.45 +23 5

A. 30—16 g Ceti.

Δα
h. m. s. m. s.
Sid. T. 1 23 [illegible] + 1 38.83 —
Δρ 0.00
M — 16.08 —

A. 34—16 g Ceti.
h. m. s.
Sid. T. 1 23 [illegible] + 2 40.71 +
Δρ 0.00
M — 16.08 —

A. 33—16 g Ceti.
h. m. s.
Sid. T. 1 23 [illegible] + 4 36.96 —
Δρ 0.00
M — 16.09 —

m
Corr. Chron. + 3

α
h. m. s.
η Tauri. 3 39 26.40 +23 4

24 p—η Tauri.

Δα
h. m. s. m. s.
Sid. T. 23 18 22.18 — 0 8.01 +
+
M — 16.08 —

A. 42—η Tauri.
h. m. s.
Sid. T. 23 18 22.18 + 0 30.46 —
Δρ .00
M — 16.09 —

(Conti

PLEIADES.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		Δ *a*	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
v. 4	24 *p* . . .	51.2	0.1	9.1	22 12 0.13	3 33.282	−0 8.07	+ 2.650	A. 43—η Tauri,
	η Tauri . . .	59.3	8.1	17.2	12 8.20	3 35.932			h. m. s.
F.	A. 42 . . .	29.5	38.5	47.6	12 38.53	3 37.181	+0 30.33	− 1.249	Sid. T. 23 18 22.18 + 0 37.98 + 2 18.56
	A. 43 . . .	37.1	46.1	55.3	12 46.17	2 39.653	+0 37.97	+ 9.064	Δρ .00 .06 *M* − 16.10 − 47.82
	24 *p* . . .	0.3	9.3	18.3	16 9.30	3 33.483	−0 7.97	+ 2.546	
	η Tauri . . .	8.3	17.2	26.3	16 17.27	3 36.029			
	A. 42 . . .	38.6	47.6	56.8	16 47.66	3 37.048	+0 30.39	− 1.019	
	A. 43 . . .	46.1	55.3	4.3	16 55.23	2 39.737	+0 36.96	+ 9.077	
	24 *p* . . .	21.7	30.7	39.9	23 19 30.76	3 33.589	−0 8.07	+ 2.571	
	η Tauri . . .	29.9	38.8	47.8	19 38.83	3 36.160			
	A. 42 . . .	0.3	9.1	18.2	20 9.20	3 37.513	+0 30.36	− 1.353	
	A. 43 . . .	8.1	16.8	25.8	20 16.90	2 39.835	+0 38.07	+ 9.110	
	24 *p* . . .	8.6	17.8	26.6	25 17.67	3 33.730	−0 8.03	+ 2.632	
	η Tauri . . .	16.8	25.6	34.7	25 25.70	3 36.362			
	A. 42 . . .	47.3	56.2	5.4	25 56.30	3 37.600	+0 30.60	− 1.238	
	A. 43 . . .	54.5	3.8	12.8	26 3.70	2 40.129	+0 38.00	+ 9.018	
	24 *p* . . .	0.6	9.6	18.6	28 9.60	3 33.991	−0 8.00	+ 2.465	
	η Tauri . . .	8.6	17.6	26.6	28 17.60	3 36.456			
	A. 42 . . .	39.2	48.2	57.2	29 48.20	3 37.811	+0 30.60	− 1.355	
	A. 43 . . .	46.6	55.4	4.7	29 55.57	2 40.276	+0 37.97	+ 8.965	
	24 *p* . . .	46.6	55.6	4.6	33 55.60	3 34.075	−0 7.93	+ 2.635	
	η Tauri . . .	54.6	3.5	12.5	34 3.53	3 36.650			
	A. 42 . . .	25.0	33.7	42.9	34 33.87	3 37.889	+0 30.34	− 1.239	
	A. 43 . . .	32.3	41.4	50.5	34 41.40	2 40.371	+0 37.87	+ 9.064	
	24 *p* . . .	52.5	1.4	10.5	38 1.47	3 34.076	−0 7.93	+ 2.625	
	η Tauri . . .	0.5	9.4	18.3	38 9.40	3 36.641			
	A. 42 . . .	30.8	39.5	48.9	38 39.73	3 37.957	+0 30.33	− 1.310	
	A. 43 . . .	38.2	47.6	56.4	38 47.40	2 40.459	+0 38.00	+ 8.967	
	A. 15 . . .	29.5	38.3	47.7	23 47 38.50	2 44.605	−0 12.50	+ 5.282	A. 15—η Tauri,
	A. 18 . . .	32.2	41.1	50.3	47 41.20	2 42.052	−0 9.80	+ 7.835	Δ *a* Δ δ
	η . . .	41.9	50.9	0.2	47 51.00	3 37.102			h. m. s. m. s. ′ ″
	A. 44 . . .	. .	48.0	57.2	48 48.05	4 36.771	+0 57.05	− 12.746	Sid. T. 0 19 00.50 − 0 12.53 + 1 21.65
	27 *f* Atlas . . .	. .	31.5	40.5	49 31.45	4 35.119	+1 40.45	− 11.094	Δρ .00 + .03 *M* 16.08 − 47.70
	A. 15 . . .	9.6	. .	27.6	54 18.60	2 44.788	−0 12.47	+ 5.297	A. 18—η Tauri,
	A. 18 . . .	12.5	21.6	30.5	54 21.53	2 42.235	−0 9.54	+ 7.850	h. m. s.
	η . . .	22.2	30.9	40.1	54 31.07	3 37.300			Sid. T. 0 19 0.50 0 9.72 + 2 00.49
	A. 44 . . .	19.4	28.2	37.2	55 28.27	4 37.102	+0 57.20	− 12.879	Δρ .00 + .04
	27 *f* Atlas . . .	. .	11.3	20.6	56 11.52	4 35.320	+1 40.45	− 11.097	*M* 16.08 − 47.71 A. 44—η Tauri,
	A. 15 . . .	59.9	8.7	17.9	0 1 8.83	2 44.985	−0 12.47	+ 5.372	h. m. s.
	A. 18 . . .	2.6	. .	20.7	1 11.65	2 42.531	−0 9.65	+ 7.826	Sid. T. 0 19 0.50 0 57.06 − 3 16.24
	η . . .	. .	21.3	30.4	1 21.30	3 37.572			Δρ .00 .07
	A. 44 . . .	9.2	18.4	27.3	2 18.30	4 37.221	+0 57.00	− 12.726	*M* − 16.10 − 47.90
	27 *f* Atlas . . .	.	1.9	10.9	3 1.85	4 35.605	+1 40.55	− 11.110	27 *f* Atlas—η Tauri, h. m. s.
	A. 15 . . .	39.8	48.8	57.9	7 48.83	45.190	−0 12.60	+ 5.274	Sid. T. 0 19 0.50 + 1 40.42 − 2 50.41
	A. 88 . . .	42.7	51.7	0.6	7 51.67	42.650	−0 9.76	+ 7.814	Δρ .00 .06
	η . . .	52.5	1.3	10.5	8 1.43	3 37.679			*M* 16.10 − 48.00
	A. 44 . . .	49.5	58.5	. .	8 58.53	4 37.422	+0 57.10	− 12.820	
	27 *f* Atlas . . .	32.7	41.7	50.0	9 41.77	4 35.799	+1 40.34	− 11.197	
	A. 15 . . .	53.6	2.6	11.7	12 2.63	2 45.323	−0 12.64	+ 5.316	
	A. 18 . . .	56.4	5.5	14.5	12 5.47	2 42.741	−0 9.80	+ 7.898	
	η . . .	6.3	15.3	24.2	13 15.27	3 37.854			
	A. 44 . . .	3.4	12.2	. .	14 12.27	4 37.659	+0 57.00	− 12.882	
	27 *f* Atlas . . .	46.6	53.7	4.8	14 55.70	4 35.890	+1 40.43	− 11.113	
	A. 15 . . .	53.1	2.0	11.3	20 2.13	2 45.480	−0 12.60	+ 5.357	
	A. 18 . . .	55.9	4.9	13.9	20 4.90	2 42.970	−0 9.83	+ 7.867	
	η . . .	5.8	14.6	23.8	20 14.73	3 38.052			
	A. 44 . . .	2.6	11.6	. .	21 11.63	4 37.752	+0 56.90	− 12.777	
	27 *f* Atlas . . .	46.2	54.9	4.2	21 53.10	4 36.119	+1 40.37	− 11.144	
	A. 15 . . .	21.9	31.1	40.2	24 31.07	2 45.652	−0 12.60	+ 5.322	
	A. 18 . . .	24.8	34.0	43.1	24 33.97	2 43.030	−0 9.70	+ 7.944	
	η . . .	34.6	43.8	52.6	24 43.67	3 38.189			
	A. 44 . . .	31.8	40.6	. .	25 40.67	4 37.900	+0 57.00	− 12.788	
	27 *f* Atlas . . .	14.9	24.0	33.1	26 24.00	4 36.160	+1 40.33	− 11.048	(Continued.)

PLEIADES.

E.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
. 6	A. 7 . . .	38.4	47.4	56.5	23 44 47.43	2 46.978	—1 36.77	— 16.610	
	23 *d* Merope . .	6.4	15.4	24.3	45 15.37	4 42.245	1 8.83	37.739	
F.	A. 13 . . .	50.8	59.6	8.6	45 59.67	3 43.757	0 24.53	26.268	
	A. 22 . . .	11.2	19.9	29.2	46 20.10	4 39.395	0 4.10	44.889	
	η Tauri . . .	15.2	24.2	33.2	46 24.20	1 47.499			
	A. 7 . . .	4.2	13.2	22.0	50 13.13	2 47.231	1 36.84	16.743	
	23 *d* Merope . .	32.2	40.8	50.2	50 41.07	4 42.295	1 8.90	37.669	
	A. 13 . . .	16.6	25.6	34.6	51 25.60	3 43.951	0 24.37	26.248	
	A. 22 . . .	36.9	45.9	54.9	51 45.90	4 49.594	0 4.07	44.968	
	η Tauri . . .	40.9	49.9	59.1	51 49.97	1 47.619			
	A. 1 . . .	33.2	42.2	. .	0 9 42.27	2 48.908	2 2.30	17.748	
	A. 11 . . .	. .	55.0	4.5	10 55.22	1 49.291	0 49.35	1.000	
	η Tauri . . .	35.5	44.5	53.7	11 44.57	1 48.291			
	A. 1 . . .	45.6	54.4	3.7	12 54.57	2 48.985	2 2.03	17.874	
	A. 11 . . .	. .	. .	16.6	14 7.47	1 49.412	0 49.30	1.170	
	η Tauri . . .	. .	. .	5.9	15 56.77	1 48.242			
	A. 1 . . .	7.9	16.9	25.9	17 16.90	2 49.091	2 2.25	17.706	
	A. 11 . . .	20.6	29.7	38.8	18 29.70	1 49.396	0 49.45	0.880	
	η Tauri . . .	. .	19.2	28.2	19 19.15	1 48.516			
	A. 1 . . .	15.7	24.7	23.8	20 24.73	2 49.102	2 2.17	17.636	
	A. 11 . . .	28.6	37.6	46.6	21 37.60	1 49.500	0 49.30	0.903	
	η Tauri . . .	17.9	26.9	35.9	22 26.90	1 48.597			
	A. 1 . . .	19.5	28.6	37.7	26 28.60	2 49.390	2 2.20	17.791	
	η Tauri . . .	21.8	30.8	39.8	28 30.80	1 48.730			
	A. 1 . . .	23.2	32.2	41.2	29 32.20	2 49.349	2 2.13	17.608	
	A. 11 . . .	35.8	45.0	53.9	30 44.90	1 49.749	—0 49.43	0.877	
	η Tauri . . .	25.3	34.3	43.4	31 34.33	1 48.872			
17	16 *g* Celæno . .	4.4	13.6	22.6	23 58 13.53	3 37.900			m. s.
	A. 10 . . .	43.3	52.2	1.3	59 52.27	3 44.954	+1 38.74	— 7.054	Corr. Chron. + 3 50.95
H.	A. 24 . . .	45.1	54.1	3.2	0 0 54.13	3 36.375	2 40.60	+ 1.425	α δ
	A. 33 . . .	41.2	50.2	59.5	2 50.30	3 44.812	4 36.77	— 6.912	h. m. s. ° ′ ″
									16 *g* Celæno, 3 36 45.56 +23 51 36.16
	16 *g* Celæno . .	30.8	39.7	48.9	4 39.80	3 38.059			
	A. 10 . . .	9.4	18.6	27.6	6 18.53	3 45.100	1 38.73	— 7.041	A. 10—16 g Celæno,
	A. 24 . . .	11.4	20.5	29.6	7 20.50	3 36.554	2 40.70	+ 1.505	△α △δ
	A. 33 . . .	7.7	16.8	25.9	9 16.80	3 44.900	4 37.00	— 6.841	h. m. s. m. s. ′ ″
									Sid. T. 0 50 18.31 + 1 38.82 — 1 48.18
	16 *g* Celæno . .	25.0	34.0	43.2	10 34.07	3 38.179			Δρ 0.00 — 0.03
	A. 10 . . .	4.0	13.0	21.9	12 12.97	3 45.234	1 38.90	— 7.055	*M* — 16.27 — 48.68
	A. 24 . . .	5.7	14.8	23.9	13 14.80	3 36.656	2 40.73	+ 1.523	A. 24—16 *g* Celæno,
	A. 33 . . .	2.0	11.0	20.0	15 11.00	3 45.029	4 36.93	— 6.850	h. m. s.
									Sid. T. 0 50 18.31 + 2 40.72 + 0 22.44
	16 *g* Celæno . .	52.3	1.3	10.4	17 1.33	3 38.317			Δρ 0.00 0.00
	A. 10 . . .	31.2	40.1	49.4	18 40.23	3 45.414	1 38.90	— 7.097	*M* — 16.28 — 48.34
	A. 24 . . .	33.0	42.1	51.1	19 42.07	3 36.890	2 40.74	+ 1.427	A. 33—16 *g* Celæno,
	A. 33 . . .	29.2	38.3	47.4	21 38.30	3 45.216	4 36.97	— 6.899	h. m. s.
									Sid. T. 0 50 18.31 + 4 36.93 — 1 45.43
	16 *g* Celæno . .	40.9	50.0	59.0	48 49.97	3 39.055			Δρ 0.00 — 0.03
	A. 10 . . .	19.7	28.6	37.8	50 28.70	3 46.157	1 38.73	— 7.102	*M* — 16.30 — 47.78
	A. 24 . . .	21.6	30.7	39.8	51 30.70	3 37.613	2 40.73	+ 1.442	
	A. 33 . . .	17.8	26.9	36.0	53 26.90	3 45.945	4 36.93	— 6.890	
	16 *g* Celæno . .	12.7	21.7	30.9	55 21.77	3 39.186			
	A. 10 . . .	51.5	0.6	9.7	57 0.60	3 46.242	1 38.83	— 7.056	
	A. 24 . . .	53.4	2.4	11.5	57 2.43	3 37.712	2 40.66	+ 1.474	
	A. 33 . . .	49.6	58.6	7.7	0 59 58.63	3 46.058	4 36.86	— 6.872	
	16 *g* Celæno .	51.9	1.0	9.9	1 2 0.93	3 39.390			
	A. 10 . . .	30.7	39.6	48.8	3 39.70	3 46.418	1 38.77	— 7.028	
	A. 24 . . .	32.7	41.5	50.7	4 41.63	3 37.933	2 40.70	+ 1.457	
	A. 33 . . .	28.6	37.8	46.9	6 37.77	3 46.280	4 36.84	— 6.890	
	16 *g* Celæno . .	0.0	8.9	18.0	23 8.97	3 38.347			
	A. 10 . . .	38.6	47.6	56.9	34 47.70	3 45.423	1 38.73	— 7.076	
	A. 24 . . .	40.6	49.6	58.8	25 49.67	3 36.921	2 40.70	+ 1.426	
	A. 33 . . .	37.0	45.9	55.0	27 45.97	3 45.260	+4 37.00	— 6.913	(Continued.)

PLEIADES.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	STARS.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Nov. 17	16 *g* Celæno . .	1.1	10.1	19.3	1 29 10.17	3 38.645			
	A. 10 . . .	40.1	49.0	58.1	30 49.07	3 45.694	+1 38.90	— 7.049	
H.	A. 24 . . .	42.0	51.0	0.0	31 51.00	3 37.156	2 40.83	+ 1.489	
	A. 33 . . .	38.1	47.2	56.2	33 47.17	3 45.479	4 37.00	— 6.834	
	16 *g* Celæno . .	24.1	33.0	42.1	35 33.07	3 38.841			
	A. 10 . . .	3.0	11.9	21.1	37 12.00	3 45.824	1 38.93	— 6.983	
	A. 24 . . .	5.0	13.7	23.0	38 13.90	3 37.359	2 40.83	+ 1.482	
	A. 33 . . .	1.1	10.0	19.0	40 10.03	3 45.683	+4 37.00	— 6.842	
Dec. 2	A. 46 . . .	34.8	43.7	53.1	0 55 43.83	4 47.110	—0 11.27	—45.351	Corr. Chron. +
	η Tauri . . .	46.3	55.1	3.9	55 55.10	1 44.752			α
F.	A. 47 . . .	. .	6.1	15.3	56 6.30	3 39.088	+0 11.20	24.252	h. m. s. °
	A. 48 . . .	9.8	19.1	28.1	56 19.00	4 40.174	+0 23.90	38.415	η Tauri, 3 39 26.43 23 4
	A. 46 . . .	12.8	21.9	30.8	1 4 21.83	4 47.601	—0 11.32	45.722	A. 46—η Tauri,
	η Tauri . . .	24.0	. .	42.3	4 33.15	1 44.872			Δ α
	A. 47 . . .	. .	44.2	53.2	4 44.20	3 39.158	+0 11.05	24.202	h. m. s. m. s.
	A. 48 . . .	47.9	56.9	6.1	4 56.97	4 40.222	+0 23.82	38.343	Sid. T. 1 7 51.68 — 0 11.30 —1
									Δ ρ 0.00 —
	A. 46 . . .	53.0	2.0	10.8	11 1.93	4 47.583	—0 11.30	45.594	*M* — 16.42 —
	η Tauri . . .	4.3	13.3	. .	11 13.23	1 44.982			A. 47—η Tauri,
	A. 48 . . .	. .	36.9	46.3	11 36.90	4 40.252	+0 23.67	— 38.263	h. m. s.
									Sid. T. 1 4 24.10 + 0 11.13 —
									Δ ρ 0.00 —
									M — 16.41 —
									A. 48—η Tauri,
									h. m. s.
									Sid. T. 1 7 51.68 + 0 23.80 —
									Δ ρ 0.00 —
									M — 16.42 —

IRENE.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		$\Delta\ \alpha$	Δ Mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
. 24	Lalande { 21014 } { 21016 } .	12.6	26.0	39.3	8 1 25.97	4 43.975	+1 18.50	+ 30.067	Corr. Chron. + 1 42.16
	Irene	31.0	44.6	57.8	2 44.47	2 39.770			α δ h. m. s. ° ′ ″
H.	Lalande { 21014 } { 21016 } .	59.2	12.8	26.2	5 12.73	4 43.929	1 18.40	30.217	Lalande 21014 } 21016 } 10 48 59.44 +23 58 43.28
	Irene	17.9	31.0	44.5	6 31.13	2 39.574			$\Delta\ \alpha$ $\Delta\ \delta$ Irene—Lalande 21014, h. m. s.
	Lalande { 21014 } { 21016 } .	59.0	12.0	25.6	8 12.20	4 44.029	+1 17.97	30.289	Sid. T. 8 15 34.93 + 1 18.00 + 7 45.74
	Irene	16.7	30.1	43.7	9 30.17	2 39.602			ρ 0.00 0.12 p — 0.25 + 2.27
	Lalande { 21014 } { 21016 } .	14.9	28.1	41.4	11 28.13	4 44.140	1 18.07	30.339	
	Irene	32.9	46.1	59.6	12 46.20	2 39.663			
	Lalande { 21014 } { 21016 } .	2.0	15.1	28.6	14 15.23	4 44.170	1 18.04	30.442	
	Irene	20.0	33.1	46.7	15 33.27	2 39.590			
	Lalande { 21014 } { 21016 } .	57.0	10.3	23.8	17 10.37	4 44.162	1 17.80	30.424	
	Irene	14.7	28.0	41.8	18 28.17	2 39.600			
	Lalande { 21014 } { 21016 } .	44.0	57.2	10.9	19 57.37	4 44.194	1 17.73	30.556	
	Irene	1.6	15.1	28.6	21 15.10	2 39.500			
	Lalande { 21014 } { 21016 } .	42.8	56.0	9.7	22 56.17	4 44.234	+1 17.50	30.594	
	Irene	0.2	13.7	27.1	24 13.67	2 39.502			
ar. 3	Irene	33.0	46.5	0.0	8 31 46.50	3 37.283			m. s.
	B. Z. 353, 21 . .	18.9	32.3	45.4	37 32.37	3 42.604	—5 45.87	5.321	Corr. Chron. + 1 50.72
H.	Irene	9.7	23.0	36.4	39 23.03	3 37.229			α δ h. m. s. ° ′ ″
	B. Z. 353, 21 . .	55.7	9.2	22.6	45 9.17	3 42.756	5 46.14	5.527	B. Z. 353, 21 10 49 54.27 +24 51 59.88
	Irene	26.7	39.9	53.3	47 39.97	3 37.298			$\Delta\ \alpha$ $\Delta\ \epsilon$
	B. Z. 353, 21 . .	12.9	26.1	39.8	53 26.27	3 42.927	5 46.30	5.629	Irene—B. Z. 353, 21. h. m. s.
	Irene	16.9	30.2	43.7	55 30.27	3 37.289			Sid. T. 8 49 24.56 — 5 46.42 + 1 26.13
	B. Z. 353, 21 . .	3.6	17.0	30.4	9 1 17.00	3 43.038	5 46.73	5.749	ρ + 0.00 0.02 p — 0.20 + 1.93
	Irene	16.0	29.3	43.0	3 29.43	3 37.300			
	B. Z. 353, 21 . .	3.0	16.4	30.0	9 16.47	3 43.154	5 47.04	+ 5.854	
ar. 5	Irene	7.7	21.0	34.6	7 27 21.10	4 40.344			m. s.
	Struve C. G. 1248 .	22.4	35.8	49.2	28 35.80	2 42.777	1 14.70	— 23.429	Corr. Chron. + 1 52.28
H.	Irene	10.7	24.0	37.7	30 24.13	4 40.438			α δ h. m. s. ° ′ ″
	Struve C. G. 1248 .	25.5	39.0	52.2	31 38.90	2 42.886	1 14.77	23.414	Struve C. G. 1248 10 43 40.20 +25 10 18.59
	Irene	2.4	16.0	29.5	33 15.97	4 40.470			$\Delta\ \alpha$ $\Delta\ \delta$
	Struve C. G. 1248 .	17.3	30.8	44.1	34 30.73	2 42.889	1 14.76	23.443	Irene—Struve C. G. 1248, h. m. s.
	Irene	49.9	3.2	16.6	37 3.23	4 40.458			Sid. T. 7 40 35.93 — 1 15.09 — 5 57.33
	Struve C. G. 1248 .	4.9	18.0	31.7	38 18.20	2 42.899	1 14.97	23.421	ρ 0.00 — 0.12 p — 0.28 + 2.33
	Irene	19.6	32.9	46.1	40 32.87	4 40.470			
	Struve C. G. 1248 .	34.6	48.0	1.4	41 48.00	2 43.062	1 15.13	23.270	
	Irene	55.0	8.1	21.4	44 8.33	4 40.536			
	Struve C. G. 1248 .	10.3	23.4	37.2	45 23.63	2 43.205	1 15.30	23.193	
	Irene	53.0	6.1	19.1	47 6.07	4 40.542			
	Struve C. G. 1248 .	8.1	21.6	35.2	48 21.63	2 43.306	1 15.56	23.098	
	Irene	44.2	57.4	11.0	49 57.53	4 40.624			
	Struve C. G. 1248 .	59.7	13.0	26.4	51 13.03	2 43.368	—1 15.50	— 23.120	

COMET, 1863, 1.

DATE.	OBJECTS.	SIDEREAL TIME.	POSITION CIRCLE.	MIC.	COMET—STAR.		RESULTS.
					P.	Δ.	
1863.		h. m. s.	° ′	revs.	° ′	revs.	m. s. Corr. Chron. + 1 38.07 α δ h. m. s. ° ′ ″ (* 119) W., 19 41 57.23 +58 25 21.50
May 4		14 8 45	342 12		153 20		
	(* 119) W and Comet	10 35	341 10		152 18		
H.		11 54	340 17		151 25		
		14 16 30		20.032		19.891	
		18 15		20.787		19.136	
	Position and distance	20 40		21.856		18.067	Comet—(* 119) W., Δα Δδ h. m. s. m. s. ′ ″
		22 30		22.743		17.180	
		24 10		23.322		16.601	
		25 25		23.849		16.074	Sid. T. 14 22 28.7 + 0 17.38 — 3 57.98
		14 31 5	335 46		146 54		Δρ — .01 — .07
	(* 119) W. and Comet	32 15	334 54		146 2		p. — 1.19 + 2.66
		33 48	333 45		144 53		

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		
		A.	B.	C.	Mean.		Δ α	Δ mic.	
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
May 4	(* 119) W.	5.5	. .	52.1	15 3 28.80	2 44.855	+0 6.60	+ 1.657	m. s. Corr. Chron. + 1 38.02
	Comet	11.7	. .	59.1	3 35.40	2 43.198			
H.	(* 119) W.	12.7	35.7	59.0	5 35.80	2 44.941	0 6.45	2.543	Comet—(* 119) W., Δα Δδ h. m. s. m. s. ′ ″
	Comet	. .	42.2	5.8	5 42.25	2 42.398			
	(* 119) W.	45.2	8.4	32.2	8 8.60	2 44.982	0 6.13	3.637	Sid. T. 15 9 30.85 + 0 5.91 + 0 53.16
	Comet	52.0	14.7	37.5	8 14.73	2 41.345			Δρ .00 + 0.02 p. — 1.12 + 0.97
	(* 119) W.	31.6	. .	18.0	9 54.80	2 45.027	0 5.35	4.434	
	Comet	36.4	. .	23.9	10 0.15	2 40.593			
	(* 119) W.	22.7	45.7	8.8	11 45.73	2 44.948	+0 5.04	5.057	
	Comet	27.8	50.5	14.0	11 50.77	2 39.891			
May 9	Comet	55.7	30.6	4.3	14 9 30.20	3 44.630	—0 38.33	7.601	m. s. Corr. Chron. + 1 29.10 α δ h. m. s. ° ′ ″
	Oeltz. N. 18980 . .	34.2	8.8	42.6	10 8.53	3 52.231			Oeltz. N. 18980, 19 3 48.37 +69 5 34.94 Oeltz. N. 18967, 19 3 11.09 +69 13 58.66
H.	Comet	10.9	43.2	17.4	12 43.83	3 43.600	0 40.17	8.647	
	Oeltz. N. 18980 . .	50.0	23.4	58.6	13 24.00	3 52.247			
	Comet	54.5	29.0	3.3	15 28.93	3 46.543	0 40.87	8.327	Comet—Oeltz. N. 18980, Δα Δδ h. m. s. m. s. ′ ″
	Oeltz. N. 18980 . .	36.0	10.0	43.4	16 9.80	3 54.870			
	Comet	41.7	16.0	50.2	18 15.97	3 44.493	—0 41.70	+ 8.947	Sid. T. 14 15 28.84 — 0 40.27 + 2 8.52 Δρ + .02 + .04
	Oeltz. N. 18980 . .	23.6	57.6	31.8	18 57.67	3 53.442			p. — 1.51 — 04

DATE.	OBJECTS.	SIDEREAL TIME.	POSITION CIRCLE.	MIC.	COMET—STAR.		
					Δ α	Δ mic.	
		h. m. s.	° ′	revs.	° ′	revs.	m. s.
May 9	Oeltz. N. 18967 and	14 38 25	205 22		196 28		Corr. Chron. + 1 28.90
	Comet . . .	41 2	206 49		197 52		
H.		42 23	207 59		199 5		Comet—Oeltz. N. 18967,
		14 44 22		36.930		15.742	Δα Δδ
		45 43		37.432		15.240	h. m. s. m. s. ′ ″
	Position and distance	47 5		37.466		15.206	Sid. T. 14 48 28.9 — 0 17.83 — 3 33.72
		48 15		37.657		15.015	Δρ — .01 — .06
		49 33		37.605		15.067	p. — 1.43 — 1.11
		50 41		38.086		14.586	
	Oeltz. N. 18967 and	14 43 40	220.32		211 38		
	Comet . . .	55 10	221.50		212 56		
		56 12	224.49		215 55		

(Continued.)

COMET, 1863, II.

E	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	COMET—STAR. Δα	Δ mic.	RESULTS.
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
10	Comet	20.3	57.7	34.4	12 47 57.47	5 53.131			m. s. Corr. Chron. + 1 23.90 α δ h. m. s. ° ′ ″ Radcliffe 4164, 18 56 6.01 +71 6 35.35 Comet—Radcliffe 4164, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 13 7 40.3 — 3 41.532 —16 38.39 Δρ — .19 — .29 p — 1.68 + 1.67
	Radcliffe 4164 . .	52.3	31.0	7.1	51 30.33	1 42.864	—3 32.86	— 70.268	
	Comet	27.7	4.5	41.7	54 4.63	5 51.634			
	Radcliffe 4164 . .	2.8	39.8	17.6	57 40.07	1 43.048	3 35.44	68.587	
	Comet	16.6	52.7	24.4	12 59 52.90	5 50.163			
	Radcliffe 4164 . .	54.2	31.2	9.7	13 3 31.70	1 43.288	3 38.80	66.876	
	Comet	24.1	0.9	37.3	6 0.77	5 48.730			
	Radcliffe 4164 . .	4.8	42.2	19.0	9 42.00	1 43.466	3 41.23	65.265	
	Comet	25.8	2.7	39.4	12 2.63	5 47.067			
	Radcliffe 4164 . .	9.9	47.0	25.0	15 47.30	1 43.674	3 44.67	63.394	
	Comet	8.6	45.8	22.3	18 45.57	5 45.404			
	Radcliffe 4164 . .	55.9	33.1	11.1	22 33.37	1 43.915	3 47.80	61.490	
	Comet	34.6	11.0	47.3	25 10.97	5 44.418			
	Radcliffe 4164 . .	24.3	2.0	39.4	29 0.90	1 44.635	—3 49.93	— 59.784	
11	Oeltzen N. 18534 .	20.4	48.9	16.2	11 37 48.50	4 33.522	+3 38.43	+ 23.764	m. s. Corr. Chron. + 1 20.92 α δ h. m. s. ° ′ ″ Oeltzen 18534 18 36 46.48 +72 17 26.42 Oeltzen 18551 37 22.24 72 24 50.82 Lalande 35006 38 22.98 72 15 10.74 Comet—Oeltzen 18534, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 11 48 41.07 + 3 34.80 + 6 27.91 Δρ + .04 + .11 p — 1.75 + 3.70 Comet—Oeltzen 18551, h. m. s. Sid. T. 11 48 41.07 + 2 59.17 — 0 55.91 Δρ — .01 — .02 p — 1.75 + 3.70 Comet—Lalande 35006, h. m. s. Sid. T. 12 7 22.88 + 1 48.36 + 9 57.96 Δρ + .06 + .17 p + 1.77 + 3.08
	Oeltzen N. 18552 .	56.6	24.2	52.2	38 24.33	2 30.501	3 2.60	— 5.119	
	Oeltzen N. 18558 .	16.6	. .	. .	38 44.33	4 35.930			
	Lalande 35006 . .	57.3	24.7	52.3	39 24.77	4 42.362	2 2.16	+ 32.604	
	Comet	59.6	26.4	54.8	41 26.93	2 35.620			
	Lalande 35006 . .	23.3	51.1	19.6	45 51.50	4 42.530	1 57.65	34.191	
	Comet	. .	48.7	17.8	47 49.15	2 34.201			
	Oeltzen N. 18534 .	14.0	42.4	10.2	49 42.20	4 33.910	3 31.17	+ 26.821	
	Oeltzen N. 18552 .	49.4	17.6	45.9	50 17.63	2 30.778	2 55.74	— 2.173	
	Lalande 35066 . .	50.7	17.6	46.0	51 18.10	4 42.581	1 55.27	+ 35.492	
	Comet	45.6	14.3	40.2	53 13.37	2 32.951			
	Lalande 35006 . .	29.2	57.6	25.1	54 57.30	4 42.737	1 53.50	36.531	
	Comet	22.3	51.2	18.9	56 50.80	2 32.068			
	Lalande 35006 . .	8.3	36.4	4.8	12 4 36.50	4 43.012	1 48.37	39.114	
	Comet	56.9	24.9	52.8	6 24.87	1 46.891			
	Lalande 35006 . .	49.8	17.8	46.2	8 17.93	4 43.200	1 46.70	40.008	
	Comet	36.8	4.5	32.6	10 4.63	1 46.185			
	Lalande 35006 . .	38.1	6.1	33.6	12 5.93	4 43.150	1 44.30	40.983	
	Comet	22.1	49.8	18.8	13 50.23	1 45.160			
	Lalande 35006 . .	11.6	39.6	7.8	15 39.67	4 43.313	1 41.93	41.917	
	Comet	53.6	21.6	49.6	16 21.60	1 44.389			
	(* 8)	2.8	31.6	. .	22 31.20	5 50.875			
	Lalande 35006 . .	45.4	13.1	. .	23 12.25	4 43.600	1 39.15	43.852	
	Comet	23.9	50.9	19.4	24 51.40	1 42.741			
	(* 8)	42.8	10.7	37.9	27 10.47	5 51.005			
	Lalande 35006 . .	25.3	52.8	19.9	27 52.67	4 43.762	+1 34.56	45.186	
	Comet	0.0	27.2	54.5	29 27.23	1 41.569			
14	Comet	48.1	42.1	32.2	13 51 40.80	2 45.656			m. s. Corr. Chron. + 1 12.15 α δ h. m. s. ° ′ ″ Oeltzen 17680 17 51 54.43 +76 30 56.36 Comet—Oeltzen 17680, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 14 19 14.31 — 3 39.92 + 4 3.66 Δρ + .08 + .08 p — 1.72 — 3.09
[.	Oeltzen N. 17680 .	6.0	57.4	50.2	54 57.87	3 43.800	—3 17.07	10.929	
	Comet	59.6	50.6	. .	13 57 50.77	2 44.559			
	Oeltzen N. 17680 .	22.0	13.0	6.9	14 1 13.97	3 44.038	3 23.20	12.264	
	Comet	51.3	42.6	34.9	4 42.93	2 43.480			
	Oeltzen N. 17680 .	19.4	12.0	4.0	8 11.80	3 44.201	3 28.87	13.506	
	Comet	59.0	51.4	42.4	10 50.93	2 42.675			
	Oeltzen N. 17680 .	32.8	24.6	. .	14 24.73	3 44.455	3 33.80	14.565	
	Comet	23.1	14.6	7.0	17 14.90	2 41.710			
	Oeltzen N. 17680 .	2.5	54.2	46.6	20 54.43	3 44.639	3 39.53	15.714	

COMET, 1863, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.	
		A.	B.	C.	Mean.		Δ α	Δ mis.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.
May 14	Comet	43.7	35.0	25.9	14 23 34.87	2 40.670		
	Oeltzen N. 17680 .	27.3	19.5	11.7	27 19.50	3 44.950	—3 44.63	+ 17.065
H.	Comet	59.9	52.0	43.3	31 51.73	2 39.460		
	Oeltzen N. 17680 .	51.2	43.1	35.7	35 43.33	3 45.021	3 51.60	18.346
	Comet	55.1	47.1	39.4	38 47.20	2 38.360		
	Oeltzen N. 17680 .	52.4	44.2	36.8	42 44.47	3 45.334	3 57.27	19.759
	Comet	52.9	45.2	37.8	45 45.30	2 37.470		
	Oeltzen N. 17680 .	56.0	48.6	41.3	49 48.63	3 45.516	—3 63.30	20.831
May 15	Oeltzen N. 17136 .	36.1	15.3	53.9	12 7 15.10	5 37.003	+7 43.27	+ 25.180
	Oeltzen N. 17168 .	3.7	44.5	23.9	9 44.03	3 37.578	+5 14.34	— 4.330
	Comet	19.6	57.9	37.6	14 58.37	3 41.908		
F.	Oeltzen N. 16849 .	52.9 9.9	. . 49.6	49.1 30.5	26 50.40	1 37.089		
	Oeltzen N. 16918 .	16.5 33.4	. . 13.3	11.3 . .	31 13.60	2 32.127		
	(* 19)	59.9 11.3	. . 50.0	47.2 29.3	37 50.54	5 42.128		
	(* 10)	. . . .	. . 8.1	6.6 49.6	40 9.81	1 41.041		
	Oeltzen N. 17136 .	0.6 17.7	. . 55.3	53.2 34.9	44 56.34	5 61.947	7 7.66	31.439
	Oeltzen N. 17168 .	. . 44.9	. . 24.6	22.2 4.4	47 24.63	3 62.077	4 39.37	+ 1.484
	Comet	8.6 25.4	. . 3.3	0.3 42.4	52 4.00	3 60.593		
	Oeltzen N. 17136 .	40.0 57.0	. . 35.9	31.8 14.3	13 2 35.80	5 36.145	6 51.48	33.924
	Oeltzen N. 17168 .	8.3 24.0	. . 4.4	1.5 43.8	5 4.40	3 36.613	4 22.88	4.307
	Comet	32.4 47.0	. . 27.3	23.2 6.4	9 27.28	3 32.306		
	Comet	26.7 43.7	. . 22.1	18.4 0.9	12 22.36	5 36.455	+6 42.70	+ 35.388
	Comet	53.7 . .	. . 50.7	48.2 29.9	14 50.82	3 36.921	+4 14.24	+ 5.769
	Comet	10.9 24.3	. . 4.9	1.0 44.2	19 5.06	3 31.152		
May 16	Comet	48.8	47.7	48.1	12 9 48.20	1 50.910		
	Schwerd. 1014 . .	10.0	10.0	9.9	12 9.97	5 37.153	—2 21.77	+ 46.244
H.	Comet	9.5	6.2	6.5	15 7.40	1 50.270		
	Schwerd. 1014 . .	32.7	33.0	33.1	17 32.93	5 37.224	2 25.53	46.955
	Comet	27.8	27.3	27.0	20 27.37	1 44.910		
	Schwerd. 1014 . .	59.1	59.3	59.4	22 59.27	5 32.325	2 31.90	47.416
	Comet	56.5	54.3	54.9	25 55.23	1 44.250		
	Schwerd. 1014 . .	32.5	32.7	32.9	28 32.70	5 32.409	2 37.47	48.160
	Comet	17.5	17.0	16.0	31 16.83	1 43.580		
	Schwerd. 1014 . .	0.7	0.6	0.1	34 0.47	5 32.510	2 43.64	48.931
	Comet	58.6	57.1	56.0	36 57.23	1 43.145		
	Schwerd. 1014 . .	45.7	45.0	45.2	39 45.30	5 32.724	2 48.07	49.580
	Comet	58.3	58.3	57.3	42 57.97	1 42.540		
	Schwerd. 1014 . .	53.5	53.2	53.1	45 53.27	5 32.908	2 55.30	50.369
	Comet	34.2	32.0	31.2	48 32.47	1 41.980		
	Schwerd. 1014 . .	33.1	33.1	33.9	51 33.37	5 33.178	—2 60.90	+ 51.199

RESULTS.

Corr. Chron. +

	α h. m. s.	°
Oeltzen N. 17136	17 20 54.25	+77
Oeltzen N. 17168	17 23 22.98	77

Comet—Oeltzen N. 17136,

	h. m. s.		Δ α	
Sid. T.	12 55 0.98		+ 7 6.28	+
		Δρ	+ .20	+
		p	— 2.13	—

Comet—Oeltzen N. 17168,

	h. m. s.			
Sid. T.	12 55 0.98		+ 4 37.71	+
		Δρ	+ .01	+
		p	— 2.13	—

Corr. Chron. +

	α h. m. s.	° ′
Schwerd. 1014,	17 7 17.40	+78

Comet—Schwerd. 1014,

	h. m. s.		Δ α	
Sid. T.	12 29 56.84		— 2 40.58	+
		Δρ	+ .38	+
		p	— 2.24	—

COMET, 1863, II.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
· 18	Comet	41.6	. .	53.6	12 45 47.70	2 37.045			Corr. Chron. + 0 57.70
		2.3	47.8	33.2					α δ
F.	(* 120) W.	11.6	. .	25.6	48 18.48	4 39.562	—2 30.78	+ 28.379	h. m. s. ° ″ ′
		32.0	18.8	4.4					(* 120) W., 16 12 56.88 +79 35 28.26
	(* 121) W.	33.6	. .	49.6	48 42.28	4 38.315			
		56.9	41.6	29.7					Comet—(* 120) W.,
									Δ α Δ δ
	Comet	45.6	. .	0.1	54 52.28	2 36.374			h. m. s. m. s. ′ ″
		5.3	52.3	38.1					Sid. T. 13 5 42.06 — 2 53.11 + 7 36.33
	(* 120) W.	26.6	. .	42.1	57 33.65	4 39.548	2 41.37	29.036	ρ — .23 + .07
		45.7	. .	20.8					p — 1.84 — 3.70
	(* 121) W.	50.2	. .	5.3	57 57.78	4 38.522			
		10.6	56.9	45.9					
	Comet	25.8	. .	37.4	13 2 30.70	2 36.074			
		. .	29.8	16.9					
	(* 120) W.	13.8	. .	28.2	4 20.26	4 39.786	2 49.56	29.574	
		33.0	20.2	6.1					
	(* 121) W.	36.6	. .	52.8	4 44.38	4 38.565			
		56.9	44.0	31.6					
	Comet	28.6	. .	41.1	8 34.50	2 34.976			
		48.8	33.5	20.5					
	(* 120) W.	24.8	. .	40.3	11 32.00	4 39.337	2 57.50	30.223	
		45.1	31.1	18.7					
	Comet	38.7	. .	49.1	14 43.38	2 34.853			
		56.6	43.1	29.4					
	(* 120) W.	41.9	. .	55.7	17 48.00	4 39.378	3 4.62	30.387	
		1.4	46.8	34.2					
	Comet	29.5	. .	51.3	21 45.56	2 34.103			
		59.6	45.1	32.3					
	(* 120) W.	54.2	. .	8.6	25 0.40	4 39.159	—3 14.84	+ 30.918	
		12.9	59.7	46.6					
		41.1	. .	3.0					m. s.
y 19	Schwerd. 919	1.9	52.7	42.8	13 23 52.30	2 34.443	+6 33.36	— 40.127	Corr. Chron. + 0 56.80
		15.9	. .	33.8					α δ
H.	Comet	38.8	26.4	13.4	30 25.66	5 31.700			h. m. s. ° ′ ″
									Schwerd. 919, 15 34 16.01 +80 13 38.08
		54.8	. .	19.0					
	Schwerd. 919	15.7	6.4	56.1	34 6.40	2 34.520	6 21.38	40.062	Comet—Schwerd. 919,
		19.2	. .	36.4					Δ α Δ δ
	Comet	39.2	27.6	. .	40 27.78	5 31.712			h. m. s. m. s. ′ ″
									Sid. T. 13 55 41.02 + 6 3.67 —10 2.70
		52.6	. .	16.5					Δ ρ — .15 — .27
	Schwerd. 919	14.0	4.0	52.7	44 3.96	2 34.701	6 8.92	39.422	p — 1.23 — 4.99
		5.0	. .	20.6					
	Comet	24.8	13.0	1.0	50 12.88	5 31.253			
		46.0	. .	7.3					
	Schwerd. 919	6.0	55.0	46.2	53 56.10	2 34.516	5 57.24	39.072	
		45.4	. .	3.3					
	Comet	5.6	52.8	39.6	13 59 53.34	5 30.718			
		9.3	. .	32.1					
	Schwerd. 919	30.4	20.0	9.4	14 3 20.24	2 33.972	5 45.84	38.744	
		58.7	. .	14.3					
	Comet	18.2	6.4	52.8	9 6.08	5 29.846			
		33.3	. .	54.8					
	Schwerd. 919	54.8	44.2	34.3	12 44.28	2 33.921	5 35.30	38.349	
		11.5	. .	28.6					
	Comet	31.8	19.0	7.0	18 19.58	5 29.400			
y 21									
		6.4	. .	27.6					
	Fedorenko 2537	26.9	18.3	8.4	14 5 17.52	2 35.406	+0 22.54	— 39.765	
		30.0	. .	50.3					
	Comet	50.9	38.3	30.8	5 40.06	4 49.309			(Continued.)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Comet	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Schwerd. 853	24.2 47.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	−4 [illegible] 44	21.[illegible]
Comet	41.2 2.4	51.7	[illegible]	[illegible]	[illegible]	[illegible]		
Schwerd. 853	35.4 57.6	46.[illegible]	[illegible]	42 [illegible]	2	44 [illegible]	−4 [illegible]	21.7[illegible]
Comet	43.5 4.9	53.6	4[illegible]	[illegible]	[illegible]	44 [illegible]		
Comet	33.2 54.8	42.4	53.6	13 23 42.[illegible]	4	[illegible]		
Schwerd. 835	9.4 32.8	20.2	30.1 7.9	24 19.[illegible]	1	32.141	−[illegible] 36.42	−23.9[illegible]
Schwerd. 853	47.4 9.8	59.7	12.3 50.1	42 59.82	5	39.103		
Comet	5.6 27.6	14.5	21.1 4.9	51 15.34	4	38.435		
Schwerd. 835	11.1 . .	21.2	31.6 10.9	52 21.27	2	42.669	1 5.93	21.629
Comet	25.8 49.7	38.6	45.0 26.2	55 37.06	4	39.610		
Schwerd. 835	36.3 . .	45.9	54.8 34.3	13 55 45.72	2	44.070	1 8.66	21.403
Comet	27.3 48.6	37.9	46.9 25.7	14 1 37.28	4	40.890		
5	44.6 6.9	54.1	6.8 43.1	2 55.10	2	45.382	−1 17.82	+ 21.380

m. s.
Corr. Chron. + 0 50.40

[illegible] 6.31
[illegible] 15 0.18

[illegible]

Δα Δδ
m. s. ′ ″
Sid. T. [illegible] — [illegible] 3.91 —10 12.68
— [illegible] — .30
— .16 — 5.41

Comet—Schwerd. 853.

Δα Δδ
m. s. ′ ″
Sid. T. [illegible] — 4 11.00 — 3 17.74
— .04 — .09
p — 9.67 — 5.29

m. s.
Corr. Chron. + 0 46.36

α δ
h. m. s. ° ′ ″
Schwerd. 835. 14 18 57.23 +79 57 57.20

Comet—Schwerd. 835.

Δα Δδ
h. m. s. m. s. ′ ″
Sid. T. 13 53 5.30 — 1 7.37 + 5 36.22
Δρ .03 + .16
p — .26 — 5.24

(Continued.)

COMET, 1863, II.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
y 22	Comet	12.6 32.8	. . 22.1	. . . .	14 9 22.10	4 36.642			
F.	Schwerd. 835 . .	. . 0.4	. . 50.1	56.7 . .	10 50.10	2 41.296	—1 28.00	+ 21.209	
y 23	Radcliffe 3117 . .	47.0 6.9	. . 54.3	2.9 41.0	14 52 54.42	4 40.497	+2 24.34	+ 25.859	m. s. Corr. Chron. + 0 43.65 α δ h. m. s. ° ′ ″ Radcliffe 3117, 13 50 37.80 +79 40 18.13 Comet—Radcliffe 3117, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 16 7.69 + 2 5.80 + 6 30.00 Δ ρ + .09 + .18 p + .81 — 4.73
H.	Comet	12.0 31.6	. . 18.5	26.2 5.5	55 18.76	2 40.500			
	Radcliffe 3117 . .	16.2	3.2	49.6	14 59 3.00	4 39.838	2 19.27	25.830	
	Comet	36.0	20.8	10.0	15 1 22.27	2 39.870			
	Radcliffe 3117 . .	19.2	5.2	53.0	4 5.80	4 36.093	2 14.17	26.125	
	Comet	34.4	19.2	6.3	6 19.97	2 35.830			
	Radcliffe 3117 . .	32.9	19.3	6.0	9 19.40	4 38.632	2 9.17	25.864	
	Comet	42.9	27.6	15.2	11 28.57	2 38.630			
	Radcliffe 3117 . .	51.5	38.7	28.8	14 38.00	4 37.820	2 5.40	25.562	
	Comet	56.3	43.2	. .	16 43.40	2 38.120			
	Radcliffe 3117 . .	30.3	18.0	4.7	34 17.67	4 39.043	1 45.83	24.529	
	Comet	17.1	3.0	50.4	36 3.50	2 40.376			
	Radcliffe 3117 . .	3.1	49.0	36.1	38 49.40	4 40.052	+1 42.43	+ 24.179	
	Comet	45.2	31.8	18.5	40 31.83	2 41.735			
ay 27	Oeltz. N. 12971 .	22.9 41.0	. . 20.2	19.4 1.2	14 45 20.94	5 28.900			m. s. Corr. Chron. + 0 35.14 α δ h. m. s. ° ′ ″ Oeltzen N., 12996, 12 41 2.62 +73 3 20.64 Comet—Oeltzen N., 12996, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 3 44.12 + 0 57.13 — 3 4.05 Δ ρ — .03 — .04 p + 1.04 — 3.57
F.	Oeltz. N. 12996 .	3.6 22.3	. . 2.6	1.9 44.4	47 2.96	4 26.005	+1 4.94	— 4.814	
	Comet	8.6 29.5	. . 7.3	6.4 47.7	48 7.90	4 21.191			
	Oeltz. N. 12971 .	46.3 5.6	. . 46.2	45.7 27.5	51 46.26	5 28.742			
	Oeltz. N. 12996 .	29.3 47.4	. . 27.4	27.3 9.3	53 28.14	4 25.927	1 3.22	5.412	
	Comet	30.9 49.7	. . 29.9	37.4 8.9	54 31.36	4 20.515			
	Oeltz. N. 12996 .	2.7 21.3	. . 1.7	1.7 . .	59 1.95	4 25.957	0 58.75	5.739	
	Comet	3.1 21.6	. . 0.3	58.4 40.1	15 0 0.70	4 20.218			
	Oeltz. N. 12996 .	35.3 53.3	. . 32.7	33.2 15.6	2 34.02	3 39.086	0 57.26	6.038	
	Comet	34.8 51.1	. . 30.7	28.7 11.1	3 31.28	3 33.048			
	Oeltz. N. 12996 .	54.9 12.9	. . 53.5	51.7 34.9	6 53.58	3 39.082	0 54.16	— 6.578	
	Comet	49.9 7.8	. . 46.7	45.7 28.6	7 47.74	3 32.504			
	Oeltzen N. 12996 .	59.4 17.7	. . 58.7	57.1 39.7	10 58.52	3 39.126	+0 52.26	+ 6.970	
	Comet	53.6 11.3	. . 49.7	48.2 30.9	11 50.78	3 32.156			
	Comet	24.7 43.7	. . 23.5	22.3 5.6	15 23.96	3 39.267	+0 49.17	— 7.291	
	Comet	13.6 33.4	. . 12.4	. . . .	16 13.13	3 31.976			
ay 28	Comet	6.1	45.4	23.4	14 4 44.97	4 23.745			m. s. Corr. Chron. + 0 32.60 α δ h. m. s. ° ′ ″ Oeltzen N. 12827 42 31 34.13 + 77 23 33.54 (Continued.)
	Oeltzen N. 12827 .	45.8	24.4	2.2	6 24.13	2 18.725	—1 39.16	+ 30.882	
H.	Comet	21.4	59.9	38.6	19 59.97	4 23.300			
	Oeltzen N. 12827 .	8.3	47.0	25.3	21 46.87	2 19.895	—1 46.90	+ 29.267	

COMET, 1863, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
May 28	Comet	27.3	4.9	43.9	14 25 5.37	4 23.070			Comet—Oeltzen N. 12827, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 14 23 43.1 — 1 48.54 + 7 27.07 Δ ρ .10 + .18 p + .81 — 3.74
	Oeltzen N. 12827 .	16.7	55.6	33.8	26 55.37	2 19.984	—1 50.00	+ 28.948	
Id.	Comet	37.3	16.0	54.1	30 15.80	4 22.497			
	Oeltzen N. 12827 .	29.2	8.2	46.5	32 7.97	2 19.786	1 52.17	28.573	
	Comet	7.7	47.2	24.2	35 46.37	4 21.957			
	Oeltzen N. 12827 .	2.0	41.3	19.2	37 40.83	2 19.744	—1 54.46	28.075	
May 30	Oeltzen N. 12407 .	38.1	14.2	49.0	15 34 13.77	2 22.353	+5 19.70	+ 43.112	m. s. Corr. Chron. + 0 26.20 α δ h. m. s. ° ′ ″ Oeltzen N. 12407 12 3 22.54 + 76 12 41.61 Comet—Oeltzen N. 12407, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 48 0.86 + 5 16.00 +10 49.07 Δ ρ + .20 + .21 p + 1.21 — 1.95
	Comet	57.9	33.6	8.9	39 33.47	5 22.595			
Id.	Oeltzen N. 12407 .	58.1	33.3	9.5	42 33.63	2 22.409	5 15.57	42.361	
	Comet	13.5	49.1	25.0	47 49.20	5 21.900			
	Oeltzen N. 12407 .	32.8	8.7	44.2	50 8.57	2 22.503	+5 12.73	+ 41.487	
	Comet	45.9	21.7	56.3	55 21.30	5 21.120			
June 1	Comet	47.9 2.9	. . 33.6	23.3 10.2	13 20 35.58	2 34.040			m. s. Corr. Chron. + 0 22.80 α δ h. m. s. ° ′ ″ Oeltzen N. 12337 11 59 43.50 + 75 26 3.57 Oeltzen N. 12397 12 3 8.27 + 75 25 27.61 Comet—Oeltzen N. 12337, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 14 3 15.76 — 6 16.88 — 6 9.84 Δ ρ + .06 — .14 p + 1.21 — 1,95 Comet—Oeltz. N. 12397, — 9 43.31 — 5 33.04 Δ ρ + .06 — .13 p + 1.21 — 1.95
Id.	Oeltzen N. 12337.8	52.2 7.6	. . . .	29.6 14.5	26 40.97	4 28.436	—6 5.39	— 20.258	
	Oeltzen N. 12397 .	17.9 33.1	. . 7.2	54.6 39.8	30 6.52	4 26.033	—9 30.94	— 17.855	
	Comet	38.5 52.7	. . 25.4	14.3 57.7	34 25.72	2 32.712			
	Oeltzen N. 12337.8	45.5 1.4	. . 34.3	22.2 7.6	40 34.20	4 28.297	6 8.48	21.447	
	Oeltzen N. 12397 .	10.8 26.3	. . 59.3	46.6 32.9	43 59.42	4 25.880	9 33.70	19.030	
	Comet	44.7 0.3	. . 34.4	28.1 6.9	14 30 34.88	2 31.409			
	Oeltzen N. 12337.8	10.9 25.4	. . 58.6	47.1 32.1	36 58.82	4 32.347	6 23.94	26.800	
	Oeltzen N. 12397 .	35.6 51.1	. . 24.7	12.7 57.9	40 24.40	4 30.072	9 49.52	24.465	
	Comet	3.0 18.2	. . 51.3	38.9 24.7	45 51.22	2 30.501			
	Oeltzen N. 12337.8	32.9 48.0	. . 20.7	. . . .	52 20.92	4 32.590	—6 29.70	— 27.951	
	Oeltzen N. 12397 .	57.9 13.1	. . 46.6	34.6 19.4	55 46.32	4 30.198	—9 55.10	— 25.559	
June 4	Comet	5.6	34.3	5.9	14 20 35.27	2 15.120			m. s. Corr. Chron. + 0 26.75 α δ h. m. s. ° ′ ″ Oeltzen N. 12020, 11 36 52.26 +73 54 26.18 Comet—Oeltzen N. 12020, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 14 27 54.62 — 0 53.90 —11 32.67 Δ ρ — .13 — .24 p + 0.77 2.27
	Oeltzen N. 12020 .	57.5	28.0	58.7	21 28.07	5 16.975	—0 52.80	— 44.725	
Id.	Comet . . .	28.3	59.5	30.0	23 59.27	2 15.224			
	Oeltzen N. 12020 .	22.0	52.1	22.9	24 52.33	5 16.965	0 53.06	44.611	
	Comet	59.0	29.8	1.8	27 30.20	2 14.662			
	Oeltzen N. 12020 .	53.7	24.0	54.2	28 23.97	5 17.009	0 53.77	45.217	
	Comet . . .	23.2	55.7	. .	30 55.03	2 14.410			
	Oeltzen N. 12020 .	18.9	. .	. .	31 49.15	5 16.982	0 54.12	45.442	
	Comet . . .	50.0	20.0	48.8	34 19.60	2 14.060			
	Oeltzen N. 12020 .	45.0	15.1	46.0	35 15.37	5 17.012	—0 55.77	— 45.822	
June 7	(* 123) W. . . .	20.0	0.8	40.6	14 3 0.47	3 24.936	+1 2.63	— 0.650	m. s. Corr. Chron. + 0 28.33 α δ h. m. s. ° ′ ″ (* 123) W., 11 22 51.39 +72 12 29.38 (Continued.)
	Comet	23.2	2.6	43.5	4 3.10	3 24.286			
Id.	(* 123) W. . . .	16.8	56.9	36.7	6 56.80	3 24.980	1 1.93	1.265	
	Comet . . .	18.4	59.2	38.6	7 58.73	3 23.715			

COMET, 1863, II.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
363.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
ne 7	(* 123) W. . . .	19.9	0.0	39.6	10 59.83	3 25.010	1 1.37	1.730	Comet—(* 123) W.,
	Comet	21.3	1.4	40.9	12 1.20	3 23.280			Δ α Δ δ h. m. s. m. s. ′ ″
	(* 123) W. . . .	51.9	32.1	11.4	14 31.80	3 25.014	1 1.03	1.814	Sid. T. 14 7 59.31 + 1 0.48 — 0 30.81
	Comet	53.0	33.4	12.1	15 32.83	3 23.200			Δ ρ .00 — .01 p + .07 — 2.10
	(* 123) W. . . .	35.4	15.7	56.1	19 15.73	3 25.057	0 59.70	2.166	
	Comet	36.0	15.9	54.4	20 15.43	3 22.891			
	(* 123) W. . . .	56.7	37.3	16.3	22 36.77	3 25.064	0 59.16	2.468	
	Comet	56.6	35.4	15.8	23 35.93	3 22.596			
	(* 123) W. . . .	29.2	9.8	49.1	26 9.37	3 25.025	0 59.30	2.835	
	Comet	29.0	9.0	48.0	27 8.67	3 22.190			
	(* 123) W. . . .	53.0	33.3	12.9	28 33.07	3 25.143	+0 58.70	— 3.143	
	Comet	52.4	32.0	10.9	29 31.77	3 22.000			
ne 8	Comet	20.3	. .	. .	14 6 0.03	5 35.372			m. s. Corr. Chron. + 0 28.79
		32.9	59.4	27.8					
F.	(* 9)	. .	. .	32.7	6 53.93	4 35.157			α δ h. m. s. ° ′ ″
		. .	54.3	20.7					
	Struve C. G. 1326 .	50.9	. .	8.0	12 29.42	2 40.232	—6 29.39	+ 38.010	Struve C. G. 1326, 11 27 13.04 +71 33 39.61
		2.7	29.3	56.2					
	Comet	39.8	. .	58.9	16 19.47	5 34.675			Comet—Struve C. G. 1326, Δ α Δ δ h. m. s. m. s. ′ ″
		53.1	19.2	46.3					
	(* 9)	36.2	. .	54.2	17 15.32	4 35.590			Sid. T. 14 41 19.85 — 6 33.63 + 8 58.98
		48.5	. .	42.4					Δ ρ — .08 + .18
	Struve C. G. 1326 .	11.6	. .	28.6	22 50.38	2 40.608	6 30.91	36.937	p + .72 — 1.59
		24.7	50.1	16.9					
	Comet	12.5	. .	31.3	25 51.96	5 34.179			
		24.3	52.4	19.3					
	(* 9)	9.9	. .	26.9	26 48.52	4 35.513			
		22.1	. .	15.2					
	Struve C. G. 1326 .	44.6	. .	. .	32 23.89	2 40.649	6 31.93	36.400	
		56.6	23.8	. .					
	Comet	3.8	. .	23.3	45 43.43	5 32.590			
		16.6	42.7	9.9					
	(*9)	. .	. .	20.8	46 41.83	4 35.595			
		15.7	. .	8.5					
	Struve C. G. 1326 .	38.9	. .	55.3	52 17.14	2 40.719	6 33.71	34.741	
		50.8	17.2	43.5					
	Comet	56.9	. .	14.9	14 54 36.30	5 31.957			
		10.0	36.3	3.4					
	(* 9)	58.4	. .	15.2	55 36.85	4 35.778			
		10.6	. .	3.2					
	Struve C. G. 1326 .	32.8	. .	50.4	15 1 11.82	2 40.761	6 35.52	34.066	
		45.6	11.7	38.6					
	Comet	12.6	. .	30.6	3 51.32	5 31.345			
		23.9	51.6	17.9					
	(* 9)	14.3	. .	31.9	4 52.98	4 35.722			
		26.1	53 1	19.5					
	Struve C. G. 1326 .	48.3	. .	6.7	10 27.84	2 40.878	6 36.52	33.337	
		1.3	28.3	54.6					
	Comet	55.8	. .	13.6	13 34.92	5 30.554			
		8.6	34.5	2.1					
	(* 9)	59.4	. .	15.9	14 37.52	4 35.822			
		11.0	37.4	3.9					
	Struve C. C. 1236 .	34.3	. .	50.9	20 12.34	2 40.923	—6 37.42	+ 32.501	
		45.3	12.6	38.6					
une 9	Comet	54.2	. .	9.0					
		6.0	31.3	58.7	14 55 31.84	3 32.099			
H.	Oeltzen N. 11901 .	. .	. .	47.2					
		43.6	9.2	35.4	15 7 9.48	4 37.971	—11 37.64	— 18.949	
	(* 9)	26.8	. .	42.0					
		38.2	4.3	31.1	8 4.48	3 35.297	—12 32.64	— 3.198	

(Continued.)

COMET, 1863, II.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
June 9	Comet	25.8 37.7	. . 4.2	40.1 28.5	11 3.26	3 30.950			m. s. Corr. Chron. + 0 29.25 α δ h. m. s. ° ′ ″ Oeltz. N. 11901, 11 29 24.09 +71 18 51.30 Comet—Oeltz. N. 11901, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 19 39.93 —11 40.41 — 5 19.91 Δ ρ — .04 — 0.10 p + .79 — 0.90
	Oeltzen N. 11901 .	4.4 16.3	. . 42.6	20.2 8.5	22 42.40	4 38.160	11 39.14	20.287	
	(* 9)	59.9 11.7	. . 37.7	15.1 3.5	23 37.58	3 35.520	12 34.32	4.570	
	Comet	52.3 2.9	. . 29.3	6.8 54.7	26 29.20	3 30.230			
	Oeltzen N. 11901 .	32.9 44.5	. . 10.6	48.2 56.6	38 10.56	4 38.450	11 41.36	21.297	
	(* 9)	27.8 39.8	. . 6.0	43.2 32.1	39 5.78	3 35.749	12 36.58	5.519	
	Comet	0.2 12.4	. . 39.2	16.0 4.3	43 38.42	3 28.700			
	Oeltzen N. 11901 .	44.0 55.6	. . 22.0	59.8 48.2	55 21.92	4 38.720	—11 43.50	— 23.097	
	(* 9)	39.4 51.2	. . 17.3	55.0 43.7	56 17.32	3 35.952	—12 38.90	— 7.252	
June 12	Oeltzen N. 11590 .	10.3 21.7	. . 46.2	21.9 10.9	14 1 46.20	4 39.798	+3 6.94	— 14.588	
F.	Oeltzen N. 11619 .	20.5 31.7	. . 55.9	31.3 20.6	2 56.00	3 45.909	+1 57.14	— 7.622	
	Comet	16.3 28.3	. . 52.7	30.6 17.9	4 53.14	3 35.287			
	Oeltzen N. 11590 .	9.2 19.7	. . 44.5	. . 9.2	7 44.47	4 39.809	3 5.81	15.079	
	Oeltzen N. 11619 .	19.9 29.7	. . 54.2	29.9 18.7	8 54.48	3 45.896	1 55.80	8.089	
	Comet	14.6 25.6	. . 50.4	26.2 14.6	10 50.28	3 37.807			
	Oeltzen N. 11590 .	4.3 15.2	. . 39.7	. . . .	15 43 39.76	4 45.235	2 57.88	21.515	
	Oeltzen N. 11619 .	13.7 25.2	. . 49.4	25.2 14.3	44 49.56	3 51.535	1 48.08	14.738	
	Comet	1.6 12.7	. . 37.2	13.5 3.2	46 37.64	2 49.582			
	Oeltzen N. 11590 .	53.4 5.3	. . 29.6	5.1 53.9	15 50 29.46	4 45.346	2 57.92	21.513	m. s. Corr. Chron. + 0 31.93 α δ h. m. s. ° ′ ″ Oeltzen N. 11590 11 7 53.84 +69 57 58.12 Oeltzen N. 11619 11 9 2.27 +69 56 12.05 Comet—Oeltzen N. 11590, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 20 19.74 + 3 0.41 — 4 59.37 Δ ρ — .04 — .08 p — 0.73 — 0.67 Comet—Oeltzen N. 11619, h. m. s. m. s. ′ ″ Sid. T. 15 20 19.74 + 1 50.46 — 3 12.96 Δ ρ — .04 — .08 p + 0.73 — 0.67
	Oeltzen N. 11619 .	3.9 15.9	. . 40.2	15.1 4.4	51.39.90	3 51.542	1 47.48	14.632	
	Comet	51.2 2.3	. . 27.7	2.8 51.9	53.27.38	2 49.695			
	Oeltzen N. 11590 .	56.7 7.9	. . 32.6	7.9 56.7	55 32.36	4 45.522	2 57.28	22.035	
	Oeltzen N. 11619 .	6.1 17.9	. . 41.7	17.2 6.8	56 41.94	3 51.563	1 47.70	14.999	
	Comet	53.7 4.6	. . 29.9	4.1 55.9	58 29.64	2 49.349			
	Oeltzen N. 11590 .	56.5 7.8	. . 32.3	7.9 57.0	16 1 32.30	4 45.706	2 56.66	22.386	
	Oeltzen N. 11619 .	6.6 18.2	. . 42.3	18.0 7.0	2 42.42	3 51.806	+1 46.54	— 15.409	
	Comet	53.5 4.2	. . 29.1	4.4 53.6	4 28.96	2 49.182			
June 16	Comet	58.9	33.0	5.0	15 34 32.30	3 37.400			
H.	(* 125) W. . . .	51.3	24.2	57.0	37 24.17	4 33.096	—2 51.87	— 8.773	
	Comet	18.3	51.0	23.4	39 50.90	3 37.080			
	(* 125) W. . . .	10.8	44.0	16.7	42 43.83	4 33.180	2 52.93	9.177	
	Comet	25.5	58.8	31.8	44 58.70	3 36.850			
	(* 125) W. . . .	18.5	51.6	24.3	47 51.47	4 33.372	2 52.77	9.599	(Continued.)

COMET, 1863, II.

E.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
e 16	Comet	52.3	25.4	58.2	50 25.30	3 36.650			m. s. Corr. Chron. + 0 32.40 α δ h. m. s. ° ′ ″ (* 125) W. 11 7 21.39 +68 18 59.73 Comet—(* 125) W., Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 15 53 48.17 — 2 53.24 — 2 33.74 Δ ρ + .02 — .04 p + 0.67 + .07
	(* 125) W. . . .	45.2	18.0	51.0	53 18.07	4 33.471	2 52.77	9.898	
	Comet	11.2	46.0	16.7	55 44.63	3 36.530			
	(* 125) W. . . .	4.7	37.8	10.7	58 37.73	4 33.650	2 53.10	10.197	
	Comet	48.0	20.4	53.1	16 1 20.50	3 36.120			
	(* 125) W. . . .	41.9	14.4	47.0	4 14.53	4 33.721	2 53.93	10.678	
	Comet	22.0	55.2	27.7	6 54.97	3 36.250			
	(* 125) W. . . .	15.8	49.1	21.9	9 48.93	4 33.865	2 53.96	10.692	
	Comet	46.2	19.0	51.4	12 18.87	3 35.970			
	(* 125) W. . . .	40.9	13.3	46.3	15 13.50	4 34.069	2 54.63	— 11.176	
y 21	Comet	56.0 2.7	. . . .	43.9 36.1	18 43 19.67	4 34.612			m. s. Corr. Chron. + 1 25.57 α δ h. m. s. ° ′ ″ (* 124) W. 11 5 19.22 + 59 23 25.49 Comet—(* 124) W., Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 18 56 25.66 — 0 24.63 + 3 2.92 Δ ρ .00 .20 p + .32 + 2.19
	(* 124) W. . . .	20.9 27.7	. . . .	8.6 1.1	43 44.62	3 35.321	0 24.95	+ 12.368	
	Comet	34.0 41.6	. . . .	22.0 13.8	44 57.85	4 34.575			
	(* 124) W. . . .	59.2 6.1	. . . .	46.6 39.4	45 22.82	3 35.286	0 24.97	12.366	
	Comet	7.6 15.0	. . . .	56.5 48.2	46 31.82	4 34.190			
	(* 124) W. . . .	33.0 40.2	. . . .	20.7 13.2	46 56.78	3 35.500	0 24.96	11.767	
	Comet	4.7 13.2	. . . .	54.1 45.1	19 3 29.27	4 34.707			
	(* 124) W. . . .	29.8 37.1	. . . .	18.1 10.0	3 53.75	3 35.712	0 24.48	12.072	
	Comet	41.0 48.7	. . . .	29.5 19.0	5 4.55	4 34.271			
	(* 124) W. . . .	4.8 12.1	. . .	53.0 45.1	5 28.75	3 35.932	0 24.20	11.416	
	Comet	13.2 21.8	. . . .	2.0 52.5	6 37.37	4 34.460			
	(* 124) W. . . .	37.9 45.3	. . . .	25.7 17.4	7 1.57	3 35.965	0 24.20	11.572	
y 22	Comet	34.6 41.8	. . . .	23.2 14.6	17 53 58.55	5 52.971			m. s. Corr. Chron. + 1 27.41 α δ h. m. s. ° ′ ″ Oeltzen N. 11584 11 7 32.53 +58 57 39.50 Oeltzen N. 11518 11 3 34.93 +59 38 27.71 Δ α Δ δ Comet—11584, h. m. s. m. s. ′ ″ Sid. T. 18 1 13.97 — 2 4.21 +20 8.85 Δ ρ + .04 .71 p + .34 + 1.65 Comet—11518, h. m. s. Sid. T. 18 28 31.50 + 1 56.42 —20 52.21 Δ ρ .02 — .78 p + .33 + 1.93
	Oeltzen N. 11854 .	39.1 47.0	. . 2.6	26.7 19.6	56 3.00	1 33.345	—2 4.45	19.627	
	Comet	43.8 52.3	. . 8.0	30.6 23.7	18 0 7.68	5 52.252			
	Oeltzen N. 11854 .	48.6 55.6	. . 12.5	35.7 27.7	2 12.02	1 33.698	2 4.34	78.555	
	Comet	49.3 57.7	. . 14.1	36.6 29.6	5 13.47	5 52.091			
	Oeltzen N. 11854 .	53.5 1.7	. . 17.7	40.5 33.1	7 17.30	1 33.822	—2 3.83	+ 78.270	
	Oeltzen N. 11518 .	34.7 42.7	. . 59.5	22.7 15.4	18 59.00	5 54.190	+1 57.06	— 81.159	
	Comet	32.3 39.3	. . 56.7	20.3 11.7	20 56.06	1 33.032			
	Oeltzen N. 11518 .	49.4 . .	. . 13.1	38.1 30.1	18 23 13.42	5 54.588	+1 56.64	— 81.368	
	Comet	46.3 54.2	. . 11.2	33.3 25.3	25 10.06	1 33.221			

(Continued.)

COMET, 1863, II.

Date.	Objects.	Observed times of transit. A.	B.	C.	Mean.	Mic.	Comet—Star. Δ α	Δ mic.	Results.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
		33.7	. .	20.7					
July [illegible]	Oeltzen N. 11518	41.0	57.6	13.7	26 57.34	5 54.791	1 56.72	81.897	
		30.1	.	17.8					
F.	Comet .	37.5	54.3	10.6	28 54.06	1 32.895			
		55.4	. .	43.5					
	Oeltzen N. 11518 .	3.6	20.3	36.2	31 19.80	5 55.045	+1 56.24	— 82.156	
		51.7	. .	39.8					
	Comet	59.6	16.8	32.3	33 16.04	1 33.890			

METIS.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		$\Delta\alpha$	Δ mic.	
363.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
ne 15	Metis	58.4	7.5	16.6	15 2 7.50	4 36.551			m. s. Corr. Chron. + 0 32.27 α δ h. m. s. ° ′ ″ Oeltz. S. 15541, 16 12 41.03 —21 30 34.34 Metis—Oeltz. S. 15541, $\Delta\alpha$ $\Delta\delta$ h. m. s. m. s. ′ ″ Sid. T. 15 20 43.10 — 0 43.09 —12 44.46 $\Delta\rho$ + .01 — .90 p — .06 + 4.34
	Oeltz. S. 15541 .	40.8	49.9	59.1	2 49.93	1 29.579	—0 42.43	— 49.965	
	Oeltz. S. 15553 .	17.9	26.9	35.9	3 26.90	5 32.869			
F.									
	Metis	2.3	11.2	20.3	4 11.26	4 36.702			
	Oeltz. S. 15541 .	. .	53.6	2.6	4 53.61	1 29.849	0 42.35	49.846	
	Oeltz. S. 15553 .	21.5	30.5	39.7	5 30.57	5 33.000			
	Metis	40.4	49.2	58.1	6 49.13	4 36.759			
	Oeltz. S. 15541 .	22.1	31.6	40.9	7 31.63	1 29.832	0 42.50	49.920	
	Metis	15.6	24.6	33.8	12 24.67	4 36.859			
	Oeltz. S. 15541 .	58.6	7.4	16.6	13 7.53	1 30.099	0 42.86	49.753	
	Metis	15.5	24.5	33.4	14 24.47	4 36.762			
	Oeltz. S. 15541 .	58.5	7.3	16.5	15 7.43	1 29.936	0 42.96	49.819	
	Metis	19.9	28.9	37.7	16 28.83	4 36.909			
	Oeltz. S. 15541 .	2.6	11.7	20.8	17 11.70	1 30.201	0 42.87	49.701	
	Metis	32.6	41.7	50.6	18 41.63	4 36.929			
	Oeltz. S. 15541 .	15.6	24.5	34.3	19 24.80	1 29.951	0 43.17	49.971	
	Metis	1.6	10.7	19.6	23 10.63	4 34.840			
	Oeltz. S. 15541 .	44.9	53.7	2.8	23 53.80	1 27.966	0 43.17	49.867	
	Metis	15.9	24.7	33.7	25 24.77	4 34.942			
	Oeltz. S. 15541 .	58.9	7.9	17.3	26 8.03	1 28.116	0 43.26	49.818	
	Metis	19.9	28.9	37.5	27 28.77	4 34.997			
	Oeltz. S. 15541 .	3.4	12.3	21.6	28 12.43	1 28.222	0 43.66	49.768	
	Metis	37.1	46.3	55.2	29 46.20	4 34.979			
	Oeltz. S. 15541 .	20.5	29.5	38.6	30 29.53	1 28.219	0 43.33	49.753	
	Metis	29.4	38.4	47.3	31 38.57	4 35.015			
	Oeltz. S. 15541 .	12.9	21.9	31.2	32 22.00	1 28.250	0 43.43	49.758	
	Metis	22.9	32.1	40.9	33 31.97	4 35.081			
	Oeltz. S. 15541 .	6.6	15.6	24.8	34 15.67	1 28.191	0 43.70	49.883	
	Metis	14.0	23.2	32.2	36 23.20	4 35.110			
	Oeltz. S. 15541 .	58.0	6.7	15.7	37 6.80	1 28.127	—0 43.60	— 49.976	
ly 1	Oeltz. S. 15225.6 .	2.9	11.8	20.6	16 27 11.77	2 37.450			
	Oeltz. S. 15227.8 .	4.9	13.7	22.6	27 13.73	1 41.272	+1 9.04	— 36.226	
F.	Oeltz. S. 15235.6 .	30.9	39.8	48.6	27 39.77	4 44.512			
	(* 12)	6.7	15.8	24.2	28 15.54	2 50.905			
	Metis	13.9	22.8	31.6	28 22.77	3 47.582			
	Oeltz. S. 15227 .	12.7	21.3	30.2	34 21.40	1 41.342	1 8.57	36.443	m. s. Corr. Chron. + 0 48.99 α δ h. m. s. ° ′ ″ Oeltz. S. 15227, 15 58 50.83 —21 29 31.79 Metis—Oeltz. N. 15227, $\Delta\alpha$ $\Delta\delta$ h. m. s. m. s. ′ ″ Sid. T. 16 58 10.41 + 1 8.17 — 9 17.40 $\Delta\rho$ .00 — .63 p .00 + 4.15
	Metis	21.2	30.2	28.5	35 29.97	4 34.792			
	Oeltz. S. 15227 .	14.4	23.3	32.2	37 23.30	1 41.484	1 8.60	36.229	
	Metis	23.2	32.0	40.5	38 31.90	4 34.720			
	Oeltz. S. 15227 .	24.0	32.6	41.5	39 32.70	1 41.330	1 8.60	36.358	
	Metis	32.6	41.2	50.1	40 41.30	4 34.695			
	Oeltz. S. 15227 .	42.2	51.3	0.0	41 51.17	1 41.340	1 8.35	36.322	
	Metis	. .	59.6	8.4	42 59.52	4 34.669			
	Oeltz. S. 15227 .	55.9	4.7	13.5	45 4.70	1 41.410	1 8.56	36.398	
	Metis	4.7	13.3	21.8	46 13.26	4 34.815			
	Oeltz. S. 15227 .	5.3	13.9	22.9	47 14.03	1 41.410	1 8.34	36.441	
	Metis	13.7	22.6	30.8	48 22.37	4 34.858			
	Oeltz. S. 15227 .	37.8	46.5	55.4	49 46.57	1 41.422	1 8.50	36.330	
	Metis	46.5	55.1	3.6	50 55.07	4 34.759			
	Oeltz. S. 15227 .	17.2	25.8	34.6	52 25.87	1 41.331	+1 8.20	— 36.473	
	Metis	25.2	34.0	43.0	53 34.07	4 34.811			(Continued.)

METIS.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
July 1	Oeltz. S. 15227 .	28.5	37.3	46.2	16 54 37.33	1 41.408	+1 8.17	— 36.329	
	Metis	36.6	45.6	54.3	55 45.50	4 34.744			
F.	Oeltz. S. 15227 .	48.2	56.6	5.6	57 56.80	1 41.340	1 8.17	36.328	
	Metis	56.3	5.0	13.6	59 4.97	4 34.675			
	Oeltz. S. 15227 .	55.4	. .	12.9	17 0 4.15	1 41.370	1 7.98	36.293	
	Metis	3.4	12.2	20.8	1 12.13	4 34.670			
	Oeltz. S. 15227 .	12.8	21.4	30.5	2 21.57	1 41.339	1 8.13	36.417	
	Metis	20.9	29.7	38.5	3 29.70	4 34.763			
	Oeltz. S. 15227 .	38.5	47.4	56.4	4 47.43	1 41.363	1 7.94	36.322	
	Metis	46.6	55.3	4.2	5 55.37	4 34.692			
	Oeltz. S. 15227 .	56.1	4.9	13.6	7 4.87	1 41.349	1 7.76	36.365	
	Metis	3.9	12.5	21.5	8 12.63	4 34.721			
	Oeltz. S. 15227 .	41.9	50.7	59.7	11 50.77	1 41.341	1 7.83	36.363	
	Metis	49.8	58.7	7.3	12 58.60	4 34.711			
	Oeltz. S. 15227 .	52.1	1.1	9.8	15 1.00	1 41.330	1 7.63	36.332	
	Metis	59.9	8.6	17.4	16 8.63	4 34.669			
	Oeltz. S. 15227 .	17.7	26.3	35.3	16 26.43	1 41.339	1 7.74	36.263	
	Metis	25.3	34.2	43.0	17 34.17	4 34.609			
	Oeltz. S. 15227 .	30.6	39.5	48.3	18 39.47	1 41.329	1 7.66	36.276	
	Metis	38.3	47.2	55.9	19 47.13	4 34.612			
	Oeltz. S. 15227 .	32.8	41.7	50.8	20 41.77	1 41.329	+1 7.63	— 36.344	
	Metis	40.6	49.4	58.2	21 49.40	4 34.680			

ECHO.

.TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
y 22	Echo	52.1	59.9	8.9	19 6 0.30	5 45.470			m. s.
	Oeltzen S. 18395 .	32.5	41.3	49.8	7 41.20	1 33.600	—1 40.90	— 71.571	Corr. Chron. + 1 27.55
F.									α δ
	Echo	45.2	53.9	2.4	11 53.83	5 45.451			h. m. s. ° ′ ″
	Oeltzen S. 18395 .	25.8	34.5	43.2	13 34.50	1 33.675	1 40.67	71.777	Oeltzen S. 18395, 18 26 7.90 —17 38 1.39
	Echo	52.4	0.7	9.2	20 2 0.77	5 45.152			Echo—Oeltzen S. 18395,
	Oeltzen S. 18395 .	34.6	43.1	51.6	3 43.10	1 33.622	1 42.33	71.531	Δ α Δ δ
									h. m. s. m. s. ′ ″
	Echo . . .	16.7	24.9	33.7	5 25.10	5 45.360			Sid. T. 19 49 22.58 — 1 42.15 —18 18.86
	Oeltzen S. 18395 .	59.4	7.9	16.6	7 7.97	1 33.691	1·42.87	71.670	Δ ρ + .02 — 1.10
									p + .09 + 3 75
	Echo	29.5	37.7	46.6	9 37.93	5 45.416			
	Oeltzen S. 18395 .	12.4	20.8	29.4	11 20.87	1 33.855	1 42.94	71.562	
	Echo	23.5	32.2	41.0	12 32.23	5 45.429			
	Oeltzen S. 18395 .	6.7	15.4	24.2	14 15.43	1 33.959	—1 43.20	— 71.471	
y 24	Oeltzen S. 18248 .	41.4	49.8	58.5	18 36 49.90	3 37.186	+2 51.70	— 25.921	m. s.
	Echo	. .	. .	50.2	39 41.60	5 33.022			Corr. Chron. + 1 30.79
F.									α δ
	Oeltzen S. 18248 .	41.8	50.7	59.6	42 50.70	3 37.605	2 51.53	25.829	h. m. s. ° ′ ″
	Echo	33.7	42.3	50.7	45 42.23	5 32.349			Oeltzen S. 18248, 18 20 1.18 —17 52 39.03
	Oeltzen S. 18248 .	9.2	17.7	26.6	51 17.83	3 37.171	2 51.27	25.759	Echo—Oeltzen S. 18248,
	Echo	0.6	. .	17.6	54 9.10	5 32.845			Δ α Δ δ
									m. h. s. m. s. ′ ″
	Oeltzen S. 18248 .	38.5	47.1	55.7	58 47.10	3 37.175	2 51.30	25.709	Sid. T. 19 9 17.24 + 2 50.99 — 6 38.71
	Echo	29.6	37.9	47.7	19 1 38.40	5 32.799			Δ ρ .00 — .38
									p + .05 + 3.78
	Oeltzen S. 18248 .	50.4	58.9	8.0	3 59.10	3 37.439	2 51.47	25.784	
	Echo	41.6	50.6	59.5	6 50.57	5 33.138			
	Oeltzen S. 18248 .	1.9	10.4	19.3	8 10.53	3 37.478	2 50.60	25.779	
	Echo	. .	. .	9.9	12 1.13	5 33.172			
	Oeltzen S. 18248 .	24.4	32.8	41.6	14 32.93	3 36.862	2 50.74	26.054	
	Echo	14.9	23.9	32.2	17 23.67	5 32.831			
	Oeltzen S. 18248 .	33.6	42.4	50.7	18 42.23	3 36.980	2 50.27	26.328	
	Echo	23.9	32.3	41.3	21 32.50	5 33.225			
	Oeltzen S. 18248 .	21.7	30.6	39.3	24 30.53	3 36.890	2 50.67	26.220	
	Echo	12.7	21.2	29.7	27 21.20	5 33.025			
	Oeltzen S. 18248 .	25.1	33.8	42.5	28 33.80	3 36.675	+2 50.33	— 26.569	
	Echo	15.4	24.4	32.6	31 24.13	5 33.159			

FIDES.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.	RESULTS.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Aug. 10	Fides	31.3	40.2	49.5	18 45 40.33	4 47.910			
	Oeltzen S. 20086 .	10.0	19.0	28.3	47 19.10	2 53.235	—1 38.77	— 20.537	Corr. Chron. +
	Oeltzen S. 20095 .	22.1	31.3	40.6	47 31.33	2 46.072			*a* h. m. s. °
	Fides	29.8	38.8	48.1	55 38.90	4 48.202			Oeltz. S. 20086, 19 48 52.21 — 25
	Oeltzen S. 20086 .	9.0	17.9	27.3	57 18.07	3 41.033	1 39.17	20.246	
	Oeltzen S. 20095 .	. .	30.2	39.6	57 30.37	3 35.530			Fides—Oeltz. 20086,
	Fides	47.3	56.5	5.6	59 56.47	4 48.460			Δ *a* h. m. s. m. s.
	Oeltzen S. 20086 .	26.5	35.9	44.7	19 1 35.70	3 41.150	1 39.23	20.387	Sid. T. 19 30 36.00 — 1 40.23 —
	Oeltzen S. 20095 .	38.7	48.1	57.2	1 48.00	3 33.605			Δ *ρ* 0.00 —
	Fides	0.3	8.9	18.3	7 9.17	4 48.770			*p* — .02 +
	Oeltzen S. 20086 .	39.3	. .	58.3	8 48.80	3 41.062	1 39.63	20.785	
	Fides	28.2	37.3	46.1	10 37.20	4 48.791			
	Oeltzen S. 20086 .	7.3	17.0	25.8	12 16.70	3 40.965	1 39.50	20.903	
	Fides	37.1	45.8	55.1	13 46.00	4 48.559			
	Oeltzen S. 20086 .	16.6	25.6	35.2	15 25.80	3 41.052	1 39.80	20.584	
	Fides . . .	38.6	47.5	56.6	18 47.57	4 38.691			
	Oeltzen S. 20086 .	18.2	27.5	36.5	20 27.40	3 41.136	1 39.83	20.632	
	Fides	12.6	21.3	31.0	22 21.63	4 48.936			
	Oeltzen S. 20086 .	52.2	2.1	11.0	23 1.77	3 41.393	1 40.14	20.620	
	Fides	57.0	6.5	15.7	20 23 6.40	4 49.179			
	Oeltzen S. 20086 .	38.9	48.2	57.7	24 48.27	3 41.471	1 41.87	20.785	
	Fides	50.7	59.7	9.0	26 59.80	4 49.235			
	Oeltzen S. 20086 .	32.8	41.8	51.4	28 42.00	3 41.501	1 42.20	20.811	
	Fides	50.9	59.9	9.3	30 0.03	4 49.270			
	Oeltzen S. 20086 .	33.3	42.5	51.6	31 42.47	3 41.205	1 42.44	— 21.142	
Aug. 19	Fides	59.8	9.2	18.2	19 23 9.07	2 34.190			
F.	Oeltzen S. 19999 .	46.7	56.1	5.3	24 56.03	2 41.568	—1 46.96	+ 7.378	Corr. Chron. +
	Fides	22.7	31.8	41.0	26 31.83	2 34.465			*a* h. m. s. °
	Oeltzen S. 19999 .	9.9	19.0	28.3	28 19.07	2 41.711	1 47.24	7.246	Oeltz. S. 19999 19 42 25.28 — 25
	Fides	7.6	16.5	26.0	30 16.70	2 34.361			Fides—Oeltz. S. 19999,
	Oeltzen S. 19999 .	55.3	4.1	13.5	32 4.30	2 41.692	1 47.60	7.331	Δ *a* h. m. s. m. s.
	Fides	54.6	3.6	12.7	33 3.63	2 34.670			Sid. T. 19 52 23.60 — 1 48.01 +
	Oeltzen S. 19999 .	41.9	51.0	0.4	34 51.10	2 41.839	1 47.47	7.169	Δ *ρ* 0.00 + *p* + 0.01 +
	Fides	8.9	18.0	26.5	38 17.80	2 34.902			
	Oeltzen S. 19999 .	56.7	5.7	15.2	39 5.87	2 42.150	1 48.07	7.248	
	Fides	14.6	23.7	33.0	41 23.77	2 35.179			
	Oeltzen S. 19999 .	2.6	11.7	21.0	43 11.77	2 42.591	1 48.00	7.412	
	Fides . . .	26.2	35.3	45.6	44 35.70	2 35.465			
	Oeltzen S. 19999 .	14.1	23.1	32.7	46 23.30	2 42.822	1 47.60	7.357	
	Fides	7.8	16.8	26.2	54 16.93	2 36.281			
	Oeltzen S. 19999 .	56.1	5.0	14.6	56 5.23	2 43.685	1 48.30	7.404	
	Fides	16.6	25.7	24.8	57 25.70	2 36.787			
	Oeltzen S. 19999 .	4.9	. . .	. .	59 14.00	2 44.167	1 48.30	7.380	
	Fides	9.3	18.2	27.5	20 19 18.33	2 37.685			
	Oeltzen S. 19999 .	57.8	6.9	16.4	21 7.03	2 45.101	1 48.70	7.416	
	Fides	59.2	8.1	17.2	24 8.17	2 37.660			
	Oeltzen S. 19999 .	47.9	56.9	6.2	25 57.00	2 45.220	1 48.83	7.560	
	Fides	14.2	23.3	32.5	27 23.33	2 37.671			
	Oeltzen S. 19999 .	3.3	12.2	21.6	29 12.37	2 45.122	1 49.04	7.451	

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TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
		51.6	. .	12.1					m. s. Corr. Chron. + 3 3.10 α δ h. m. s. ° ′ ″ Bond's Z. 22.97, 0 7 4.70 + 0 6 55.32 Nemausa—Bond 2297, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 22 5 13.45 + 2 11.35 + 1 31.69 Δ ρ + 0.00 + 0.05 p — 0.15 + 3.51
. 15	Bond's Z. 22.23.97	55.5	. .	16.0	21 39 3.80	3 35.779	+2 12.10	+ 6.503	
		3.8	. .	24.4					
H.	Nemausa . . .	7.5	. .	27.9	41 15.90	3 29.376			
		37.2	. .	58.0					
	Bond's Z. 22.23.97	41.0	. .	1.0	42 49.40	3 35.893	2 11.97	6.465	
		49.2	. .	9.8					
	Nemausa . . .	53.0	. .	13.5	45 1.37	3 29.428			
		26.2	. .	46.7					
	Bond's Z. 22.23.97	30.1	. .	50.3	46 38.32	3 35.997	2 11.90	6.332	
		38.0	. .	58.6					
	Nemausa . . .	42.0	. .	2.3	48 50.22	3 29.665			
		54.2	. .	14.9					
	Bond's Z. 22.23.97	58.0	. .	18.6	52 6.42	3 36.140	2 11.68	6.202	
		6.0	. .	26.5					
	Nemausa . . .	9.8	. .	30.1	21 54 18.10	3 29.938			
		9.1	. .	29.8					
	Bond's Z. 22.23.97	13.1	. .	33.4	22 0 21.35	3 36.315	2 11.37	6.039	
		20.6	. .	41.0					
	Nemausa . . .	24.4	. .	44.9	2 32.72	3 30.276			
		53.6	. .	14.2					
	Bond's Z. 22.23.97	57.4	. .	18.0	4 5.80	3 36.394	2 11.20	5.880	
		4.8	. .	25.4					
	Nemausa . . .	8.7	. .	29.1	6 17.00	3 30.514			
		7.4	. .	28.0					
	Bond's Z. 22.23.97	11.2	. .	31.7	8 19.57	3 36.459	2 11.03	5.770	
		18.4	. .	39.0					
	Nemausa . . .	22.3	. .	42.7	10 30.60	3 30.689			
		29.5	. .	50.1					
	Bond's Z. 22.23.97	33.4	. .	54.0	11 41.75	3 36.540	2 10.87	5.714	
		40.4	. .	1.1					
	Nemausa . . .	44.3	. .	4.7	13 52.62	3 30.826			
		33.5	. .	54.1					
	Bond's Z. 22.23.97	37.4	. .	57.8	15 45.70	3 36.587	2 10.72	5.403	
		44.2	. .	4.9					
	Nemausa . . .	48.0	. .	8.6	17 56.42	3 30.184			
		5.7	. .	26.4					
	Bond's Z. 22.23.97	9.5	. .	30.1	19 17.92	3 36.816	2 10.63	+ 5.473	
		16.4	. .	37.0					
	Nemausa . . .	20.2	. .	40.6	22 21 28.55	3 31.343			
ep. 16	Bond's Z. 22.96 .	40.6	49.0	57.4	21 3 49.00	5 37.788			m. s. Corr. Chron. + 3 2.37 α δ h. m. s. ° ′ ″ Bond's Z. 22.97, 0 7 4.70 + 0 6 55.39 Nemausa—Bond 22.97, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 21 22 23.98 + 1 25.16 — 8 0.62 Δ ρ — 0.01 — 0.29 p — 0.19 + 3.59
	Bond's Z. 97 .	10.4	18.5	27.2	4 18.70	5 32.722	+1 24.50	— 30.986	
F.	Nemausa . . .	34.9	43.0	51.7	5 43.20	3 33.623			
	Bond's Z. 22.97 .	8.7	16.8	25.3	7 16.93	5 32.812	1 24.67	- 31.195	
	Nemausa . . .	33.3	41.6	49.9	8 41.60	3 33.922			
	Bond's Z. 22.97 .	47.0	55.3	3.6	28 55.30	5 33.640	1 23.56	31.546	
	Nemausa . . .	10.6	18.8	27.2	30 18.86	3 35.101			
	Bond's Z. 22.97 .	. .	18.9	27.7	31 18.90	5 33.700	+1 25.90	31.621	
	Nemausa . . .	. .	42.6	51.8	32 42.80	3 35.236			
p. 22	Nemausa . . .	54.1	6.2	18.2	21 18 6.17	2 31.252	—1 31.20	4.034	
	Weisse O. 71 . .	25.2	37.3	49.6	19 37.37	2 27.218			
H.									
	Nemausa . . .	45.5	57.6	10.0	20 57.70	2 31.299	1 31.33	4.024	
	Weisse O. 71 . .	16.9	29.0	41.2	22 29.03	3 27.275			(Continued.)

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DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
Sep. 22	Nemausa . . .	23.3	35.1	47.3	21 23 35.23	2 31.532			
	Weisse O. 71 . .	54.7	6.8	19.0	25 6.83	2 27.320	—1 31.60	— 4.212	Corr. Chron. + 3 3.24 α δ
H.	Nemausa . . .	32.4	44.5	56.8	26 44.57	2 31.673			h. m. s. ° ′ ″
	Weisse O. 71 . .	4.0	16.1	28.4	28 16.17	2 27.426	1 31.60	4.247	Weisse O. 71, 0 5 2.64 + 0 59 1.82
	Nemausa . . .	40.0	52.4	4.4	29 52.27	2 31.916			Nemausa—Weisse O. 71,
	Weisse O. 71 . .	12.0	24.1	36.5	31 24.20	2 27.458	1 31.93	4.458	Δ α Δ δ h. m. s. m. s. ′ ″
	Nemausa . . .	20.8	33.0	. .	32 33.00	2 31.960			Sid. T. 21 34 18.11 — 1 31.81 — 1 7.46
	Weisse O. 71 . .	52.8	4.9	17.1	34 4.93	2 27.519	1 31.93	4.441	Δ ρ 0.00 0.00 p — 0.18 + 3.59
	Nemausa . . .	2.9	14.9	27.1	35 14.97	2 32.060			
	Weisse O. 71 . .	34.7	46.9	59.1	36 46.90	2 27.500	1 31.93	4.560	
	Nemausa . . .	32.8	45.0	57.0	38 44.93	2 32.298			
	Weisse O. 71 . .	5.0	17.0	29.3	40 17.10	2 27.695	1 32.17	4.603	
	Nemausa . . .	48.1	0.3	12.4	42 0.27	2 32.391			
	Weisse O. 71 . .	20.3	32.5	44.6	43 32.47	2 27.704	1 32.20	-4.687	
	Nemausa . . .	27.5	39.5	51.9	44 39.63	2 32.533			
	Weisse O. 71 . .	59.7	11.7	24.1	46 11.83	2 27.812	—1 32.20	4.721	
Sep. 24	Weisse XXIII, 1183	35.2	43.6	51.7	21 25 43.50	3 34.189	+3 43.73	17.732	m. s. Corr. Chron. + 3 3.19
H.	Nemausa . . .	19.0	27.2	35.5	29 27.23	4 38.844			α δ h. m. s. ° ′ ″
	Weisse XXIII, 1183	37.1	45.4	53.8	31 45.43	3 34.392	3 43.57	17.830	B. A. C. 8265, 23 58 6.82 — 1 15 20.18
	Nemausa . .	20.8	29.0	37.2	35 29.00	4 39.145			Nemausa—B. A. C. 8365,
	Weisse XXIII, 1183	36.0	44.2	52.4	36 44.20	3 34.489	3 43.40	17.992	Δ α Δ δ
	Nemausa . .	19.3	27.7	35.8	40 27.60	4 39.404			h. m. s. m. s. ′ ″ Sid. T. 21 56 49.83 + 3 42.92 — 4 41.37
	Weisse XXIII, 1183	59.1	7.4	15.7	42 7.40	3 34.642	3 43.20	18.108	Δ ρ 0.00 — 0.14
	Nemausa . . .	42.4	50.6	58.8	45 50.60	4 39.673			p — 0.15 + 3.61
	Weisse XXIII, 1183	11.1	19.3	27.6	47 19.33	3 34.716	3 43.07	18.243	
	Nemausa . . .	54.2	2.4	10.6	51 2.40	4 39.882			
	Weisse XXIII, 1183	51.9	0.0	8.4	53 0.10	3 34.848	3 42.80	18.456	
	Nemausa . . .	34.7	42.8	51.2	56 42.90	4 40.227			
	Weisse XXIII, 1183	44.7	52.9	1.2	21 57 52.93	3 34.960	3 42.54	18.578	
	Nemausa . .	27.3	35.4	43.7	22 1 35.47	4 40.461			
	Weisse XXIII, 1183	11.1	19.4	27.8	3 19.43	3 35.116	3 42.47	18.641	
	Nemausa . .	53.6	1.9	. .	7 1.90	4 40.680			
	Weisse XXIII, 1183	49.2	57.4	5.8	8 57.47	3 35.180	3 42.33	18.865	
	Nemausa . . .	31.6	39.8	. .	12 39.80	4 40.968			
	Weisse XXIII, 1183	39.0	47.4	55.7	13 47.37	3 35.300	+3 42.10	— 19.010	
	Nemausa . . .	21.0	29.4	38.0	17 29.47	4 41.233			
Sep. 28	Nemausa . . .	49.2	57.3	5.7	22 21 57.40	2 42.539			
	(*) 11	12.2	20.3	28.3	22 20.27	1 46.991			m. s.
F.	Weisse XXIII, 1209	41.6	49.8	58.2	22 49.87	2 43.779	—0 52.47	+ 1.240	Corr. Chron. + 3 3.57 α δ
	Nemausa . . .	36.3	44.4	52.6	25 44.43	2 42.949			h. m. s. ° ′ ″
	Weisse XXIII, 1209	. .	. .	45.2	26 37.03	2 44.051	0 52.60	1.102	Weisse XXIII, 1209, 23 59 22.31 —1 59 30.58
	Nemausa . . .	38.6	46.9	54.6	27 46.70	2 43.002			Nemausa—Weisse XXIII, 1209,
	Weisse XXIII, 1209	30.2	39.4	47.9	28 39.17	2 43.972	0 52.47	0.970	Δ α Δ δ h. m. s. m. s. ′ ″
	Nemausa . . .	44.6	52.6	1.0	32 52.73	2 43.207			Sid. T. 22 40 22.46 — 0 53.06 + 0 11.49
	Weisse XXIII, 1209	37.2	45.8	54.1	33 45.70	2 44.139	0 52.97	0.872	Δ ρ .00 .00 p + .10 + 3.68
	Nemausa . . .	17.7	25.9	34.2	43 25.93	2 43.573			
	Weisse XXIII, 1209	10.9	19.2	27.5	44 19.20	2 44.211	0 53.27	0.638	
	Nemausa . . .	23.3	31.5	39.6	45 31.47	2 43.900			
	Weisse XXIII, 1209	. .	24.8	. .	46 24.80	2 44.361	0 53.33	0.461	(Continued.)

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ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
p. 28	Nemausa . . .	58.8	7.5	15.6	22 49 7.30	2 43.951			
F.	Weisso XXIII. 1209	52.6	0.8	9.4	50 0.93	2 44.388	—0 53.63	+ 0.437	
	Nemausa . . .	56.8	5.2	13.5	52 5.17	2 44.129			
	Weisse XXIII. 1209	50.6	58.9	. .	52 58.92	2 44.410	0 53.75	+ 0.281	
p. 29	Nemausa . . .	0.0	8.2	16.7	21 22 8.30	5 38.465			m. s. Corr Chron. + 3 3.62
H.	Weisse XXIII. 1209	39.8	48.0	56.4	23 48.07	3 33.807	1 39.77	— 34.743	α δ h. m. s. ° ′ ″
	Nemausa . . .	42.4	50.6	59.0	25 50.67	5 38.643			Weisse XXIII. 1209, 23 59 22.31 — 1 59 30.55
	Weisse XXIII. 1209	22.1	30.4	38.8	27 30.43	3 33.863	1 39.76	34.865	Nemausa—Weisse XXIII. 1209,
	Nemausa . . .	42.5	50.8	59.1	28 50.80	5 38.768			Δα Δδ h. m. s. m. s. ′ ″
	Weisse XXIII. 1209	22.3	30.5	38.9	30 30.57	3 33.918	1 39 77	34.935	Sid. T. 21 40 17.54 — 1 40.20 — 8 58.74
	Nemausa . . .	45.4	53.9	2.0	32 53.77	5 38.891			Δρ — 0.01 — 0.32
	Weisse XXIII. 1209	25.5	33.8	42.1	34 33.80	3 34.026	1 40.03	34.950	p — 0.16 + 3 64
	Nemausa . . .	4.5	12.8	21.1	36 12.80	5 39.089			
	Weisse XXIII. 1209	44.5	53.0	1.2	37 52.90	3 34.106	1 40.10	35.068	
	Nemausa . . .	57.3	5.7	14.1	39 5.70	5 39.195			
	Weisse XXIII. 1209	37.8	46.0	54.3	40 46.03	3 34.139	1 40.33	35.141	
	Nemausa . . .	29.0	37.2	45.7	42 37.30	5 39.383			
	Weisse XXIII. 1209	9.4	17.7	26.1	44 17 73	3 34.215	1 40.43	35.256	
	Nemausa . . .	17.6	25.8	33.9	45 25.77	5 39.590			
	Weisse XXIII. 1209	58.0	6.2	14.6	46 6.27	3 34.322	1 40.50	35.353	
	Nemausa . . .	4.1	12.4	20.7	48 12.40	5 39.712			
	Weisse XXIII. 1209	44.7	52.9	1.3	49 52.97	3 34.390	1 40.57	35.407	
	Nemausa . . .	53.3	1.7	10.0	51 1.67	5 39.918			
	Weisse XXIII.1209	34.1	42.3	50.7	52 42.37	3 34.450	—1 40.70	— 35.553	

ANGELINA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
Sept. 15	Weisse 0, 88 . .	15. 3	19. 2	. .	23 1 17. 25	. . .	+0 21. 05	. . .	Corr. Chron. + 3 1. 15
	Angelina . . .	36. 4	40. 2	. .	1 38. 30	. . .			α δ h. m. s. ° ′ ″
♄.	Weisse 0, 88 . .	58. 0	2. 0	. .	2 0. 00	. . .	0 21. 20	. . .	Weisse 0, 88, 0 6 3. 20 + 2 11 45. 93
	Angelina . . .	19. 2	23. 2	. .	2 21. 20	. . .			Angelina—Weisse 0h., 88,
	Weisse 0, 88 . .	36. 7	40. 6	. .	2 38. 65	. . .	0 21. 00	. . .	Δα Δδ h. m. s. m. s. ′ ″
	Angelina . . .	57. 8	1. 5	. .	2 59. 65	. . .			Sid. T. 23 18 59. 16 + 0 20. 63 + 9 12. 49*
	Weisse 0, 88 . .	20. 4	24. 1	. .	3 22. 25	. . .	0 21. 05	. . .	Δ ρ + 0. 00 + . 24
	Angelina . . .	41. 5	45. 1	. .	3 43. 30	. . .			p − 0. 05 − 2. 75
	Weisse 0, 88 . .	58. 3	2. 1	. .	4 0. 20	. . .	0 21. 10	. . .	r. * The measured Δ δ is corrected — 0. 012 to reduce
	Angelina . . .	19. 3	23. 3	. .	4 21. 30	. . .			it to the time of the measured Δ α.
	Weisse 0, 88 . .	33. 1	39. 9	. .	4 38. 00	. . .	0 20. 95	. . .	
	Angelina . . .	57. 1	0. 8	. .	4 58. 95	. . .			
	Weisse 0, 88 . .	18. 1	22. 0	. .	5 20. 05	. . .	0 21. 05	. . .	
	Angelina . . .	39. 1	43. 1	. .	5 41. 10	. . .			
	Weisse 0, 88 . .	56. 5	0. 3	. .	5 58. 40	. . .	+0 20. 95	. . .	
	Angelina . . .	17. 5	21. 2	. .	6 19. 35	. . .			
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 008	. . .	+ 36. 059	
	Angelina . . .	. .	. .	. .	8 41. 00	2 34. 811	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 067	. . .	36. 088	
	Angelina . . .	. .	. .	. .	10 31. 00	2 34. 841	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 047	. . .	36. 081	
	Angelina . . .	. .	. .	. .	12 23. 00	2 34. 828	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 145	. . .	36. 138	
	Angelina . . .	. .	. .	. .	14 8. 00	2 34. 869	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 082	. . .	35. 989	
	Angelina . . .	. .	. .	. .	15 55. 00	2 34. 955	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 143	. . .	35. 981	
	Angelina . . .	. .	. .	. .	17 41. 00	2 35. 024	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 156	. . .	36. 038	
	Angelina . . .	. .	. .	.	19 40. 00	2 34. 980	. . .		
	Weisse 0, 88 . .	. .	. .	. .	. . .	4 45. 178	. . .	35. 906	
	Angelina . . .	. .	. .	. .	21 23. 00	2 35. 134	. . .		
	Weisse 0, 88 . .	2. 8	6. 7	. .	25 4. 75	. . .	+0 20. 20	. . .	
	Angelina . . .	23. 0	26. 9	. .	25 24. 95	. . .			
	Weisse 0, 88 . .	38. 7	42. 4	. .	25 40. 55	. . .	0 20. 35	.	
	Angelina . . .	59. 1	2. 7	. .	26 0. 90	. . .			
	Weisse 0, 88 . .	17. 5	21. 3	. .	26 19. 40	. . .	0 20. 45	. . .	
	Angelina . . .	37. 9	41. 8	. .	26 39. 85	. . .			
	Weisse 0, 88 . .	57. 0	0. 6	. .	26 58. 80	. . .	0 20. 10	. .	
	Angelina . . .	17. 1	20. 7	. .	27 18. 90	. . .			
	Weisse 0, 88 . .	9. 8	13. 6	. .	28 11. 70	. . .	0 20. 20	. . .	
	Angelina . . .	29. 9	33. 9	. .	28 31. 90	. . .			
	Weisse 0, 88 . .	45. 3	49. 0	. .	28 47. 15	. . .	0 20. 20	. . .	
	Angelina . . .	5. 5	9. 2	. .	29 7. 35	. . .			
	Weisse 0, 88 . .	29. 5	33. 5	. .	29 31. 50	. .	0 20. 20	. . .	
	Angelina . . .	49. 8	53. 6	. .	29 51. 70	. . .			
	Weisse 0, 88 . .	7. 4	11. 2	. .	30 9. 30	. . .	+0 20. 10	. . .	
	Angelina . . .	27. 6	31. 2	. .	30 29. 40	. . .			
Sept. 22	Angelina . . .	40. 3	52. 8	4. 7	1 35 52. 60	2 32. 240			
	Weisse 0, 10 . .	. .	55. 2	7. 6	37 55. 33	5 37. 390	−2 2. 73	+ 48. 020	(Continued.)

ANGELINA.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
pt. 22	Angelina . . .	53.2	5.4	17.9	1 40 5.50	2 32.403			Corr. Chron. + 3 3.46
	Weisse 0, 10 . .	56.2	8.2	20.5	42 8.30	5 37.430	−2 2.80	+ 47.897	α δ
H.									h. m. s. ° ′ ″
	Angelina . . .	40.8	53.1	5.2	43 53.03	2 32.469			Weisse 0, 10, 0 2 32.45 + 1 33 1.28
	Weisse 0, 10 . .	44.0	56.0	8.3	45 56.10	5 37.457	2 3.07	47.858	
									Angelina—Weisse 0, 10,
	Angelina . . .	23.7	36.0	48.0	48 35.90	2 32.384			Δ α Δ δ
	Weisse 0, 10 . .	27.0	39.0	51.3	50 39.10	5 37.403	2 3.20	47.887	h. m. s. m. s. ′ ″
									Sid. T. 1 57 34.83 − 2 3.46 +12 12.36
	Angelina . . .	11.0	23.2	35.4	52 23.20	2 32.526			Δ ρ + 0.01 0.36
	Weisse 0, 10 . .	14.4	26.6	39.0	54 26.67	5 37.368	2 3.47	47.712	p + 0.12 + 2.82
	Angelina . . .	8.0	20.2	32.2	56 20.13	2 32.682			
	Weisse 0, 10 . .	11.8	23.8	36.0	58 23.87	5 37.563	2 3.74	47.751	
	Angelina . . .	59.7	11.9	24.0	2 0 11.87	2 32.499			
	Weisse 0, 10 . .	3.4	15.6	27.9	2 15.63	5 37.311	2 3.76	47.682	
	Angelina . . .	35.0	47.2	59.2	4 47.13	2 32.597			
	Weisse 0, 10 . .	38.7	51.0	3.0	6 50.90	5 37.388	2 3.77	47.661	
	Angelina . . .	47.0	59.0	11.4	8 59.13	2 32.595			
	Weisse 0, 10 . .	50.9	3.1	15.3	11 3.10	5 37.340	2 3.97	47.615	
	Angelina . . .	13.0	25.1	37.4	12 25.17	2 32.770			
	Weisse 0, 10 . .	17.2	29.3	41.4	14 29.30	3 37.324	−2 4.13	+ 47.424	
									m. s.
pt. 24	Weisse XXIII, 1186	11.0	19.0	27.4	22 35 19.13	3 34.481	+0 41.80	− 12.123	Corr. Chron. + 3 3.18
	Angelina . . .	52.8	0.8	9.2	36 0.93	4 33.527			α δ
									h. m. s. ° ′ ″
H.	Weisse XXIII, 1186	26.3	34.5	42.8	37 34.53	3 34.533	0 41.64	12.198	Weisse XXIII, 1186, 23 58 13.21 + 1 38 40.50
	Angelina . . .	8.0	16.1	24.4	38 16.17	4 33.654			
									Angelina—Weisse XXIII, 1186,
	Weisse XXIII, 1186	46.2	54.4	2.8	39 54.47	3 34.585	0 41.73	12.092	Δ α Δ δ
	Angelina . . .	28.0	36.1	44.5	40 36.20	4 33.600			h. m. s. m. s. ′ ″
									Sid. T. 22 49 55.22 + 0 41.45 − 3 8.51
	Weisse XXIII, 1186	42.9	51.2	59.4	42 51.17	3 34.619	0 41.60	12.223	Δ ρ − 0.00 − 0.10
	Angelina . . .	24.4	32.9	41.0	43 32.77	4 33.765			p − 0.07 + 2.83
	Weisse XXIII, 1186	8.9	17.0	25.2	45 17.03	3 34.703	0 41.54	12.327	
	Angelina . . .	50.4	58.5	6.8	45 58.57	4 33.953			
	Weisse XXIII, 1186	18.4	26.7	35.0	47 26.70	3 34.764	0 41.43	12.361	
	Angelina . . .	59.9	8.1	16.4	48 8.13	4 34.048			
	Weisse XXIII, 1186	37.6	45.8	54.1	49 45.83	3 34.826	0 41.27	12.281	
	Angelina . . .	18.9	27.1	35.3	50 27.10	4 34.030			
	Weisse XXIII, 1186	10.1	18.5	26.7	52 18.43	3 34.884	0 41.20	12.353	
	Angelina . . .	51.3	59.7	7.9	52 59.63	4 34.160			
	Weisse XXIII, 1186	20.7	28.9	37.2	54 28.93	3 34.920	0 41.14	12.604	
	Angelina . . .	1.9	10.0	18.3	55 10.07	4 34.447			
	Weisse XXIII, 1186	41.5	49.7	58.0	56 49.73	3 34.950	0 41.14	12.350	
	Angelina . . .	22.7	30.9	39.0	57 30.87	4 34.223			
									m. s.
pt. 29	(* 126) W. . . .	28.7	37.0	45.2	22 32 36.97	2 38.916	0 54.36	32.446	Corr. Chron. + 3 3.63
	Angelina . . .	. .	31.3	39.6	33 31.33	4 45.500			α δ
									h. m. s. ° ′ ″
H.	(* 126) W. . . .	50.0	58.2	6.5	35 58.23	2 39.015	0 54.24	32.400	(* 126 W.) 23 53 49.89 + 1 17 54.05
	Angelina . . .	44.2	52.5	0.7	36 52.47	4 45.553			
									Angelina—(* 126) W.,
	(* 126) W. . . .	37.6	45.9	54.3	38 45.93	2 39.166	0 54.20	32.398	Δ α Δ δ
	Angelina . . .	31.9	40.0	48.5	39 40.13	4 45.702			h. m. s. m. s. ′ ″
									Sid. T. 22 44 53.54 + 0 54.14 − 8 17.84
	(* 126) W. . . .	2.0	10.2	18.6	41 10.27	2 39.123	0 54.13	32.475	Δ ρ 0.00 − 0.21
	Angelina . . .	56.2	4.3	12.7	42 4.40	4 45.736			p − 0.07 + 2.85
	(* 126) W. . . .	19.4	27.8	36.1	43 27.77	2 39.174	+0 54.03	− 32.460	
	Angelina . . .	13.7	21.6	30.1	44 21.80	4 45.772			(Continued.)

ANGELINA.

Date.	Objects.	Observed times of transit. A.	B.	C.	Mean.	Mic.	Planet—Star. Δ α	Δ mic.	Results.
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1862.	C° 12h, W. .	30.0	38.1	46.4	22 45 38.17	2 39.160	+0 54.16	— 32.432	
	Angelina . . .	. .	32.3	40.6	46 32.33	4 45.730			
	C° 12h, W. . . .	44.9	53.0	1.3	48 53.07	2 39.262	0 53.83	— 32.601	
	Angelina . .	38.7	46.9	55.1	49 46.90	4 46.001			
Oct. 6	Weisse XXIII, 1002	40.0	52.2	4.5	23 25 52.23	4 42.255	+0 15.80	+ 35.646	m. s. Corr. Chron. + 3 3.10 α δ h. m. s. ° ′ ″ Weisse XXIII, 1002, 23 49 36.01 + 0 29 42.79 Angelina—Weisse XXIII, Δα Δδ h. m. s. Sid. T. 23 41 32.72 + 0 15.41 + 9 5.09 Δ ρ 0.00 0.25 p — 0.01 + 2.87
	Angelina . .	56.0	8.0	20.1	26 8.03	2 32.471			
″	Weisse XXIII, 1002	36.5	48.7	1.1	26 48.77	4 41.969	0 15.83	35.535	
	Angelina . .	52.2	4.7	16.9	27 4.60	2 32.296			
	Weisse XXIII, 1002	27.3	39.4	. .	27 39.53	4 41.875	0 15.84	35.462	
	Angelina	43.2	55.2	7.7	27 55.37	2 32.275			
	Weisse XXIII, 1002	21.6	33.9	46.0	28 33.83	4 41.856	0 15.84	35.644	
	Angelina	37.6	49.6	1.8	28 49.67	2 32.074			
	Weisse XXIII, 1002	13.4	25.5	37.9	29 25.60	4 41.869	0 15.63	35.582	
	Angelina .	20.2	41.1	53.4	29 41.23	2 32.149			
	Weisse XXIII, 1002	49.7	1.8	14.0	47 1.83	4 42.048	0 15.24	35.496	
	Angelina	5.0	17.0	29.2	47 17.07	2 32.414			
	Weisse XXIII, 1002	43.8	56.0	8.2	47 56.00	4 41.961	0 15.10	35.720	
	Angelina .	59.0	11.0	23.3	48 11.10	2 32.103			
	Weisse XXIII, 1002	38.0	50.0	2.2	48 50.07	4 42.058	0 14.93	35.507	
	Angelina . . .	52.9	. .	17.1	49 5.00	2 32.413			
	Weisse XXIII, 1002	29.6	41.7	54.0	49 41.77	4 42.039	0 15.06	35.531	
	Angelina . . .	44.4	57.0	9.1	49 56.83	2 32.370			
	Weisse XXIII, 1002	20.3	32.4	44.7	50 32.47	4 42.060	+0 14.83	+ 35.273	
	Angelina . . .	35.2	47.1	59.6	50 47.30	2 32.649			
Oct. 8	Angelina . .	40.2	48.5	57.0	21 57 48.57	4 33.508			
	Weisse XXIII, 1002	39.0	47.0	55.6	21 59 47.20	2 38.208	—1 58.63	— 21.162	m. s. Corr. Chron. + 3 33.40 α δ h. m. s. ° ′ ″ Weisse XXIII, 1002, 23 49 36.01 + 0 29 42.82 Angelina—Weisse XXIII, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 22 16 40.88 — 1 59.28 — 5 24.08 Δ ρ 0.00 — 0.17 p — 0.09 + 2.87
″	Angelina . .	14.4	22.7	31.0	22 1 22.70	4 33.525			
	Weisse XXIII, 1002	13.3	21.6	30.0	3 21.63	2 38.336	1 58.93	21.051	
	Angelina . . .	35.4	43.8	52.0	4 43.73	4 33.517			
	Weisse XXIII, 1002	34.6	42.9	51.2	6 42.90	2 38.410	1 59.17	20.969	
	Angelina . . .	39.9	48.1	56.2	7 48.07	4 33.556			
	Weisse XXIII, 1002	38.9	47.0	55.4	9 47.10	2 38.418	1 59.03	21.000	
	Angelina . . .	19.7	28.0	36.3	11 28.00	4 33.719			
	Weisse XXIII, 1002	19.1	27.3	35.6	13 27.33	2 38.552	1 59.33	21.029	
	Angelina . . .	38.0	46.3	54.8	14 46.37	4 33.872			
	Weisse XXIII, 1002	37.5	45.6	54.0	16 45.70	2 38.549	1 59.33	21.185	
	Angelina . . .	51.6	59.7	8.0	17 59.77	4 33.890			
	Weisse XXIII, 1002	51.0	59.3	7.5	19 59.27	2 38.636	1 59.50	21.116	
	Angelina . . .	24.5	32.8	41.0	21 32.77	4 33.970			
	Weisse XXIII, 1002	24.1	32.2	40.6	23 32.30	2 38.724	1 59.53	21.108	
	Angelina . . .	43.5	51.8	0.0	24 51.77	4 34.270			
	Weisse XXIII, 1002	43.0	51.2	59.6	26 51.27	2 38.787	1 59.50	21.345	
	Angelina . . .	44.8	53.0	1.3	28 53.03	4 34.526			
	Weisse XXIII, 1002	44.6	52.8	1.2	30 52.87	2 39.050	1 59.84	21.338	

DORIS.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
8	Weisse I, 612 . .	11.0	. .	27.6	23 4 19.35	2 36.967			m. s.
	Doris	42.7	51.1	59.2	7 51.00	3 38.850	+3 31.65	— 14.668	Corr. Chron. + 3 33.42
I.	Weisse I, 612 . .	46.9	55.1	3.5	10 55.17	2 37.031			α δ h. m. s. ° ′ ″
	Doris	18.4	26.6	35.0	14 26.67	3 39.251	3 31.50	15.005	Weisse I, 612, 1 34 30.30 + 7 13 12.89
	Weisse I, 612 .	40.0	48.4	56.6	15 48.33	2 37.280			Doris—Weisse I, 612,
	Doris	11.2	19.5	27.8	19 19.50	3 39.240	3 31.17	14.745	Δ α Δ δ h. m. s. m. s. ′ ″
	Weisse I, 612 . .	57.1	5.6	13.7	20 5.47	2 37.336			Sid. T. 23 35 37.81 + 3 30.95 — 3 52.48
	Doris	28.5	36.7	44.9	24 36.70	3 39.535	3 31.23	14.984	Δ ρ 0.00 — 0.09 p — 0.12 + 2.33
	Weisse I, 612 . .	54.7	3.1	11.3	26 3.03	2 37.434			
	Doris	25.7	34.0	42.3	29 34.00	3 39.782	3 30.97	15.133	
	Weisse I, 612 . .	47.5	55.9	4.2	30 55.87	2 37.613			
	Doris	18.6	26.9	35.4	34 26.97	3 39.998	3 31.10	15.170	
	Weisse I, 612 . .	16.6	25.0	33.2	36 24.93	2 37.657			
	Doris	47.3	55.6	4.0	39 55.63	3 40.222	3 30.70	15.350	
	Weisse I, 612 . .	8.7	17.0	25.3	41 17.00	2 37.758			
	Doris	39.2	47.5	56.0	44 47.57	3 40.460	3 30.57	15.487	
	Weisse I, 612 . .	47.4	55.7	4.1	46 55.73	2 37.952			
	Doris	17.7	26.1	34.5	50 26.10	3 40.684	3 30.37	15.517	
	Weisse I, 612 . .	41.2	49.6	58.0	51 49.60	2 38.231			
	Doris	11.6	19.7	28.1	55 19.80	3 40.970	+3 30.20	— 15.524	
t. 9	Doris	35.7	43.9	52.3	22 50 43.97	3 28.692			m. s. Corr. Chron. + 3 34.00
	Santini 102 . . .	49.1	57.3	5.6	54 57.33	3 39.201	—4 13.36	+ 10.509	α δ h. m. s. ° ′ ″
F	Doris	5.4	13.6	22.0	57 13.67	2 41.821			Santini 102, 1 41 33.49 + 7 0 26.82
	Santini 102 . . .	19.1	27.3	35.8	23 1 27.40	3 39.495	4 13.73	10.459	Doris—Santini 102,
	Doris	2.9	11.1	19.6	4 11.20	2 41.919			Δ α Δ δ
	Santini 102 . . .	16.3	24.8	33.3	8 24.80	3 39.565	4 13.60	10.431	h. m. s. m. s. ′ ″ Sid. T. 23 4 22.61 — 4 13.65 + 2 39.76
	Doris	57.3	5.5	14.0	11 5.60	2 42.380			Δ ρ .00 .06
	Santini 102 . . .	11.2	19.5	27.9	16 19.53	3 39.865	—4 13.93	+ 10.270	p — .14 + 2.38
t. 12	Weisse I, 576 . .	51.7	0.3	8.7	23 18 0.23	5 48.248	+1 55.24	+ 79.437	m. s.
	Doris	47.1	55.4	3.9	19 55.47	1 28.812			Corr. Chron. + 3 35.60
	(* 9.3)	52.4	. .	9.0	20 0.70	1 31.621			α δ
F.	Weisse I, 576 . .	51.6	59.4	7.8	22 59.60	5 48.149	1 55.25	79.347	h. m. s. ° ′ ″ Weisse I, 576, 1 33 18.40 + 6 23 58.85
	Doris	. .	54.8	2.9	24 54.85	1 28.803			
	(* 9.3)	51.6	59.9	7.9	24 59.80	1 31.732			Doris—Weisse I, 576,
	Weisse I, 576 . .	40.7	49.2	57.3	26 49.07	5 48.529	1 54.57	79.308	Δ α Δ δ h. m. s. m. s. ′ ″
	Doris	. .	. .	51.9	28 43.64	1 29.222			Sid. T. 22 38 13.14 + 1 54.81 +20 16.96
	(* 9.3)	. .	. .	57.6	28 49.34	1 31.899			Δ ρ + .02 .67 p — .16 + 2.43
	Weisse I, 576 . .	56.6	4.5	13.4	31 4.83	5 48.517	1 54.64	79.338	
	Doris	51.3	59.4	7.7	32 59.47	1 29.180			
	(* 9.3)	. .	4.8	13.2	33 4.92	1 31.945			
	Weisse I, 576 . .	14.5	22.7	31.1	35 22.77	5 48.540	1 54.76	79.296	
	Doris	9.3	17.6	25.7	37 17.53	1 29.245			
	(* 9.3)	14.9	. .	31.6	37 23.25	1 31.779			
	Weisse I, 576 . .	15.5	23.5	32.2	42 23.73	5 49.000	1 55.00	79.465	
	Doris	10.5	18.5	. .	44 18.73	1 29.536			
	Weisse I, 576 . .	10.6	18.7	27.2	52 18.83	5 49.127	+1 54.20	+ 79.238	
	Doris	. .	12.8	21.5	54 13.03	1 29.890			
	(* 9.3)	. .	. .	27.7	54 19.33	1 32.252			(Continued.)

DORIS.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1863. Oct. 13	Weisse I, 576 . .	58.9	7.2	15.6	23 18 7.23	5 35.284	+1 10.30	+ 53.630	
	Doris	9.3	17.5	25.8	19 17.53	1 41.655			Corr. Chron. +
H.	Weisse I, 576 . .	6.1	14.5	22.8	21 14.47	5 35.427	1 10.10	53.838	α h. m. s. ° Weisse I, 576, 1 33 18.41 + 6
	Doris	16.3	24.4	33.0	22 24.57	1 41.590			
	Weisse I, 576 . .	33.1	41.4	49.9	23 41.47	5 35.419	1 10.10	53.579	Doris—Weisse I, 576,
	Doris	43.2	51.5	0.0	24 51.57	1 41.841			Δ α h. m. s. m. s.
	Weisse I, 576 . .	32.9	41.1	49.6	26 41.20	5 35.515	1 10.23	53.423	Sid. T. 23 36 21.44 + 1 9.89 +
	Doris	43.1	51.5	59.7	27 51.43	1 42.093			Δ ρ + 0.01 p − 0.11 +
	Weisse I, 576 . .	10.6	19.0	27.3	29 18.97	5 35.536	1 10.06	53.547	
	Doris	20.8	29.0	37.3	30 29.03	1 41.990			
	Weisse I, 576 . .	4.0	12.3	20.8	32 12.37	5 35.528	1 9.83	53.412	
	Doris	14.0	22.2	30.4	33 22.20	1 42.117			
	Weisse I, 576 . .	51.7	59.9	8.3	36 59.97	5 35.596	1 9.70	53.404	
	Doris	1.5	9.7	17.8	38 9.67	1 42.193			
	Weisse I, 576 . .	56.7	4.9	13.2	40 4.93	5 35.654	1 9.54	53.368	
	Doris	6.2	14.4	22.8	41 14.47	1 42.287			
	Weisse I, 576 . .	27.2	35.6	44.0	42 35.60	5 35.677	1 9.63	53.308	
	Doris	37.0	45.2	53.5	43 45.23	1 42.370			
	Weisse I, 576 . .	50.1	58.6	7.0	44 58.57	5 35.765	+1 9.43	+ 53.376	
	Doris	59.8	7.9	16.3	46 8.00	1 42.390			

EURYNOME.

ATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
pt. 23	Weisse 0,944 . .	10.5	18.5	27.0	20 26 18.66	2 41.530	+1 10.89	— 4.100	m. s. Corr. Chron. + 3 3.27 α δ h. m. s. ° ′ ″ Weisse 0,944, 0 54 38.60 + 9 0 46.24 Eurynome—Weisse 0,944 Δ α Δ δ m. h. s. m. s. ′ ″ Sid. T. 21 12 31.23 + 1 9.90 — 1 11.13 Δ ρ .00 — .04 p — .28 + 4.28
F.	Eurynome . . .	21.0	29.7	38.0	27 29.57	2 45.630			
	Weisse 0,944 . .	36.0	44.5	52.5	33 44.33	3 29.370	1 10.87	3.930	
	Eurynome . . .	47.0	55.2	3.4	34 55.20	3 33.300			
	Weisse 0,944 . .	58.0	6.5	14.7	38 6.40	3 29.492	1 10.66	4.123	
	Eurynome . . .	8.7	17.0	25.5	39 17.06	3 33.615			
	Weisse 0,944 . .	30.2	38.2	46.8	43 38.40	3 29.725	1 10.37	4.117	
	Eurynome . . .	41.3	50.0	58.0	44 49.77	3 33.842			
	Weisse 0,944 . .	50.0	58.5	6.5	21 3 58.33	3 30.709	1 10.25	4.622	
	Eurynome . . .	. .	8.5	17.0	5 8.58	3 35.331			
	Weisse 0,944 . .	14.0	22.5	31.0	7 22.50	3 30.924	1 10.00	4.661	
	Eurynome . . .	. .	32.5	. .	8 32.50	3 35.585			
	Weisse 0,944 . .	31.5	40.0	48.0	13 39.83	3 31.310	1 10.00	4.791	
	Eurynome . . .	41.5	50.0	58.0	14 49.83	3 36.107			
	Weisse 0,944 . .	37.0	45.5	54.0	17 45.50	3 31.361	1 9.56	4.871	
	Eurynome . . .	46.7	55.0	3.5	18 55.06	3 36.232			
	Weisse 0,944 . .	20.0	28.1	36.5	21 28.20	3 31.500	1 9.63	4.682	
	Eurynome . . .	29.5	38.0	46.0	22 37.83	3 36.182			
	Weisse 0,944 . .	17.0	25.5	33.5	28 25.33	3 31.655	1 9.32	5.115	
	Eurynome . . .	26.3	. .	43.0	29 34.65	3 36.770			
	Weisse 0,944 . .	9.0	17.5	26.0	34 17.50	3 31.870	1 9.10	5.081	
	Eurynome . . .	18.3	26.5	35.0	35 26.60	3 36.951			
	Weisse 0,944 . .	10.0	18.5	26.6	38 18.37	3 32.070	1 9.20	5.100	
	Eurynome . . .	19.7	27.5	35.5	39 27.57	3 37.170			
	Weisse 0,944 . .	42.0	50.5	58.5	40 50.37	3 32.535	1 8.90	5.104	
	Eurynome . . .	51.0	59.5	7.3	41 59.27	3 37.639			
pt. 24	Weisse 0,944 . .	9.3	21.6	34.0	23 29 21.63	3 30.995	0 25.90	35.187	m. s. Corr. Chron. + 3 3.26 α δ h. m. s. ° ′ ″ Weisse 0,944, 0 54 38.61 + 9 0 46.31 Weisse 0,946, 0 54 43.98 + 8 52 27.42 Eurynome—Weisse 0,944, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 23 41 17.02 + 0 25.67 — 9 3.34 Δ ρ .00 — .21 p — .14 + 4.12 Eurynome—Weisse 0,946, h. m. s. Sid. T. 0 3 12.90 + 0 19.89 — 0 47.58 Δ ρ .00 — .02 p — .10 + 4.12
H.	Eurynome . . .	. .	47.5	59.9	29 47.53	5 36.097			
	Weisse 0,944 . .	14.2	26.4	38.8	31 26.47	3 31.025	0 25.83	35.296	
	Eurynome . . .	40.0	52.2	4.7	31 52.30	5 36.236			
	Weisse 0,944 . .	43.9	56.1	8.7	33 56.23	3 31.077	0 25.80	35.354	
	Eurynome . . .	9.8	22.0	34.3	34 22.03	5 46.346			
	Weisse 0,944 . .	45.9	58.2	10.4	36 58.17	3 31.074	0 25.65	35.448	
	Eurynome . . .	. .	23.8	36.1	37 23.82	5 36.437			
	Weisse 0,944 . .	38.2	50.2	3.0	38 50.47	3 31.103	0 25.60	35.462	
	Eurynome . . .	. .	16.0	28.4	39 16.07	5 36.480			
	Weisse 0,944 . .	45.0	57.1	9.5	41 57.20	3 31.209	0 25.70	35.552	
	Eurynome . . .	10.4	22.8	35.5	42 22.90	5 36.676			
	Weisse 0,944 . .	40.4	52.6	5.1	43 52.70	3 31.255	0 25.40	35.525	
	Eurynome . . .	. .	18.1	30.4	44 18.10	5 36.695			
	Weisse 0,944 . .	49.6	1.8	14.0	46 1.80	3 31.273	0 25.50	35.631	
	Eurynome . . .	. .	27.2	39.6	46 27.30	5 36.819			
	Weisse 0,946 . .	15.3	27.6	40.0	51 27.63	3 39.862	0 20.17	2.879	
	Eurynome . . .	35.6	47.8	0.0	51 47.80	3 42.741			
	Weisse 0,946 . .	45.6	57.7	10.0	53 57.77	3 39.854	0 20.03	2.976	
	Eurynome . . .	5.6	17.7	30.1	54 17.80	3 42.830			
	Weisse 0,946 . .	37.5	49.5	2.1	56 49.70	3 39.915	0 19.97	3.035	
	Eurynome . . .	57.4	9.6	22.0	57 9.67	3 42.950			
	Weisse 0,946 . .	49.0	1.1	13.6	59 1.23	3 39.963	0 19.94	3.079	
	Eurynome . . .	9.0	21.1	33.4	59 21.17	3 43.042			

(Continued.)

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δα	Δ mic.	RESULTS.
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1863. Sept. 24	Weisse 0,946 . .	43.0	55.1	7.4	0 0 55.17	3 39.973	+0 19.76	− 3.177	
H.	Eurynome . . .	2.7	14.9	27.2	1 14.93	3 43.150			
	Weisse 0,946 . .	9.7	22.0	34.3	3 22.00	3 40.009	0 19.83	3.175	
	Eurynome . . .	29.5	41.8	54.2	3 41.83	3 43.184			
	Weisse 0,946 . .	2.2	14.3	26.7	5 14.40	3 40.014	0 19.70	3.223	
	Eurynome . . .	21.9	34.0	46.4	5 34.10	3 43.237			
	Weisse 0,946 . .	38.0	50.0	2.3	7 50.10	3 40.075	+0 19.70	− 3.269	
	Eurynome . . .	57.5	9.8	22.1	8 9.80	3 43.344			
Sept. 25	Eurynome . . .	2.9	11.0	19.4	20 31 11.10	5 37.040			m. s. Corr. Chron. + 3 3.25 α δ h. m. s. ° ′ ″ Weisse 0,944, 0 54 38.62 9 0 46.35 Lalande 1737, 0 53 37.83 + 8 45 25.27 Eurynome—Weisse 0,944, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 20 50 56.70 − 0 10.33 −15 30.22 Δρ .03 − .62 p − .38 + 4.62 Eurynome—Lalande 1737, h. m. s. Sid. T. 21 2 59.07 + 0 50.23 − 0 3.17 Δρ .00 .00 p − .37 − 4.54
F.	Weisse 0,944 . .	12.8	21.2	29.2	31 21.07	1 36.702	−0 9.97	− 60.339	
	Eurynome . . .	40.3	48.5	56.9	33 48.57	5 37.265			
	Weisse 0,944 . .	50.7	58.9	6.8	33 58.80	1 37.000	0 10.23	60.266	
	Eurynome . . .	12.4	24.5	36.8	36 24.57	5 37.670			
	Weisse 0,944 . .	27.0	. .	43.1	36 35.05	1 37.149	0 10.48	60.522	
	Eurynome . . .	33.8	42.4	50.8	39 42.33	5 37.792			
	Weisse 0,944 . .	39.9	52.6	4.7	39 52.40	1 37.382	0 10.07	60.411	
	Eurynome . . .	7.6	. .	24.3	42 15.95	5 38.032			
	Weisse 0,944 . .	13.7	26.1	38.5	43 26.10	1 37.450	0 10.15	60.583	
	Eurynome . . .	45.7	53.9	2.6	44 54.07	5 38.291			
	Weisse 0,944 . .	55.8	4.2	12.7	45 4.23	1 37.599	0 10.16	60.693	
	Eurynome . . .	37.4	45.5	54.3	46 45.73	5 38.369			
	Weisse 0,944 . .	47.3	56.0	4.4	46 55.90	1 37.609	−0 10.17	− 60.761	
	Lalande 1737 . .	39.7	48.2	56.7	49 48.20	5 38.428	+0 50.57	+ 0.047	
	Eurynome . . .	30.4	38.7	47.2	50 38.77	5 38.381			
	Weisse 0,944 . .	40.8	.	57.4	50 49.10	1 37.829	−0 10.33	− 60.553	
	Lalande 1737 . .	19.0	27.5	35.9	54 27.47	5 38.559	+0 50.26	− 0.263	
	Eurynome . . .	9.3	17.7	26.2	55 17.73	5 38.822			
	Weisse 0,944 . .	19.1	28.2	36.7	55 28.00	1 38.000	−0 10.27	60.823	
	Lalande 1737 . .	46.3	54.7	3.1	58 54.70	5 38.830	+0 50.20	0.160	
	Eurynome . . .	36.5	45.0	53.2	59 44.90	5 38.990			
	Weisse 0,944 . .	47.0	55.7	4.0	59 55.57	1 38.220	−0 10.67	60.771	
	Lalande 1737 . .	27.9	36.2	44.9	21 2 36.33	5 33.892	+0 50.17	0.328	
	Eurynome . . .	18.2	26.5	34.8	3 26.50	5 29.220			
	Weisse 0,944 . .	28.5	37.4	45.7	3 37.20	1 38.191	−0 10.70	61.030	
	Lalande 1737 . .	32.7	41.4	49.7	9 41.26	5 39.343	+0 49.94	− 0.331	
	Eurynome . . .	22.9	31.2	39.5	10 31.20	5 39.674			
	Weisse 0,944 . .	33.7	41.7	50.4	10 41.93	1 38.609	−0 10.73	− 61.066	
Sept. 26	Lalande 1737 . .	29.0	37.5	46.0	22 14 37.50	2 35.561	+0 6.27	− 31.112	m. s. Corr. Chron. + 3 3.24 α δ h. m. s. ° ′ ″ Lalande 1737, 0 53 37.84 + 8 45 25.32 Eurynome—Lalande 1737, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 22 27 5.69 + 0 5.84 − 7 59.72 Δρ .00 − .21 p − .16 + 4.19
H.	Eurynome . . .	35.4	43.6	52.2	14 43.77	4 40.811			
	Lalande 1737 . .	5.7	14.0	22.6	15 14.10	2 35.536	0 6.03	31.272	
	Eurynome . . .	11.8	20.0	28.6	15 20.13	4 40.946			
	Lalande 1737 . .	46.7	55.0	3.5	15 55.07	2 35.624	0 6.10	31.225	
	Eurynome . . .	52.6	1.2	9.7	16 1.17	4 40.987			
	Lalande 1737 . .	44.4	52.9	1.1	16 52.80	2 35.570	0 6.13	31.287	
	Eurynome . . .	50.6	59.0	7.2	16 58.93	4 40.995			
	Lalande 1737 . .	11.8	20.2	28.8	31 20.27	2 35.654	0 5.63	31.292	
	Eurynome . . .	17.5	25.8	34.4	31 25.90	4 41.084			
	Lalande 1737 . .	47.6	56.0	4.0	31 55.87	2 35.764	+0 5.63	− 31.295	
	Eurynome . . .	53.2	1.4	9.9	32 1.50	4 41.197			

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. P.	Δ.	RESULTS.
		s.	s.	s.	h. m. s.	revs.	° ′	revs.	
1863. Oct. 5	Weisse 0, 749 . .	2.0	10.4	18.9	21 46 10.43	5 38.321	+3 5.67	+ 22.637	
H.	Eurynome . . .	7.8	16.1	24.4	49 16.10	4 32.692			Corr. Chron. +
	Weisse 0, 749 . .	39.3	47.6	56.0	50 47.63	5 38.424	3 5.67	22.548	a h. m. s. °
	Eurynome . . .	45.0	53.2	1.7	53 53.30	4 32.884			Weisse 0, 749, 0 43 53.23 + 7
	Weisse 0, 749 . .	52.7	1.2	9.3	56 1.07	5 38.554	3 5.46	22.382	Eurynome—Weisse 0,749,
	Eurynome . . .	58.1	6.5	15.0	21 59 6.53	4 33.180			Δ a
	Weisse 0, 749 . .	37.6	46.1	54.3	22 0 46.00	5 38.651	3 5.20	22.250	h. m. s. m. s. Sid. T. 22 15 3.97 + 3 5.04 +
	Eurynome . . .	42.9	51.1	59.6	3 51.20	4 33.409			Δρ .00 + p — .26 +
	Weisse 0, 749 . .	55.8	4.1	12.6	5 4.17	5 38.757	3 5.23	22.189	
	Eurynome . . .	1.0	9.4	17.8	8 9.40	4 33.576			
	Weisse 0, 749 . .	48.5	56.9	5.1	12 56.83	5 38.952	3 4.97	21.960	
	Eurynome . . .	53.5	1.8	10.1	16 1.80	4 34.000			
	Weisse 0, 749 . .	8.8	17.0	25.3	17 17.03	5 39.150	3 4.70	21.959	
	Eurynome . . .	13.4	21.8	30.0	20 21.73	4 34.199			
	Weisse 0, 749 . .	13.4	21.8	30.1	22 21.77	5 39.128	3 4.60	21.847	
	Eurynome . . .	18.0	26.3	34.8	25 26.37	4 34.289			
	Weisse 0, 749 . .	38.4	46.7	55.0	26 46.70	5 39.233	3 4.53	21.619	
	Eurynome . . .	42.9	51.2	59.6	29 51.23	4 34.622			
	Weisse 0, 749 . .	58.3	6.8	15.0	31 6.70	5 39.349	3 4.33	+ 21.642	
	Eurynome . . .	2.7	11.0	19.4	34 11.03	4 34.715			
Oct. 6	Weisse 0, 749 . .	32.4	40.9	49.2	21 2 40.83	3 38.770	2 20.40	— 10.115	
H.	Eurynome . . .	52.9	1.2	9.6	5 1.23	4 35.808			Corr. Chron. +
	Weisse 0, 749 . .	38.2	46.6	55.0	6 46.60	3 38.869	2 20.37	10.309	a h. m. s. ° Weisse 0, 749, 0 43 53.24 + 7
	Eurynome . . .	58.6	7.0	15.3	9 6.97	4 36.100			Eurynome—Weisse θ, 749,
	Weisse 0, 749 . .	53.9	2.1	10.5	12 2.17	3 39.153	2 20.10	10.338	Δ a h. m. s. m. s.
	Eurynome . . .	14.0	22.2	30.6	14 42.27	4 36.414			Sid. T. 21 29 39.93 + 2 19.74 —
	Weisse 0, 749 . .	50.8	59.0	7.3	15 59.03	3 39.237	2 19.94	10.511	Δρ .00 —
	Eurynome . . .	10.5	19.0	27.4	18 18.97	4 36.671			p — .33 +
	Weisse 0, 749 . .	20.7	28.9	37.2	19 28.93	3 39.415	2 19.87	10.502	
	Eurynome . . .	40.5	48.8	57.1	21 48.80	4 36.840			
	Weisse 0, 749 . .	31 3	39.7	48.0	23 39.67	3 39.481	2 19.93	10.715	
	Eurynome . . .	51.2	59.6	8.0	25 59.60	4 37.119			
	Weisse 0, 749 . .	59.1	7.4	15.8	27 7.43	3 39.590	2 19.80	10.771	
	Eurynome . . .	18.9	27.2	. .	29 27.23	4 37.284			
	Weisse 0, 749 . .	41.6	50.0	. .	31 50.00	3 39.770	2 19.43	10.869	
	Eurynome . . .	1.1	9.4	17.8	34 9.43	4 37.562			
	Weisse 0, 749 . .	47.4	56.0	4.1	36 55.83	3 39.976	2 19.30	10.917	
	Eurynome . . .	6.8	15.1	23.5	39 15.13	4 37.816			
	Weisse 0, 749 . .	41.1	49.5	57.9	40 49.50	3 40.053	2 19.13	11.034	
	Eurynome . . .	0.2	8.7	17.0	43 8.63	4 38.010			
	Weisse 0, 749 . .	20.3	28.7	37.0	44 28.67	3 40.163	+2 18.93	— 11.132	
	Eurynome . . .	39.2	47.6	. .	46 47.60	4 38.218			
Oct. 8	Eurynome . . .	39.7	48.0	56.3	20 59 48.00	3 32.015			
	Weisse 0, 788 . .	40.8	49.0	57.4	21 0 49.07	3 34.772	—1 1.07	+ 2.787	
H.	Eurynome . . .	31.3	39.8	48.0	2 39.70	3 32.090			
	Weisse 0, 788 . .	32.4	40.9	49.2	3 40.83	3 34.850	—1 1.13	+ 2.760	(Con

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. △ α	△ mic.	RESULTS.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Oct. 9	Weisse 0, 733 . .	1.5	9.7	18.3	22 57 9.83	1 45.790	+0 49.34	— 24.107	
	Eurynome . . .	50.8	59.2	7.5	57 59.17	3 39.981			
F.	Weisse 0, 733 . .	56.1	4.2	12.6	23 0 4.30	1 45.825	0 49.43	24.233	
	Eurynome . . .	45.4	53.7	2.1	0 53.70	3 40.142			
	Weisse 0, 733 . .	43.5	51.9	0.2	1 51.87	1 45.867	0 49.36	24.358	
	Eurynome . . .	32.9	41.1	49.7	2 41.23	3 40.309			
	Weisse 0, 733 . .	37.6	45.9	54.3	3 45.93	1 45.971	0 49.37	24.323	
	Eurynome . . .	26.9	35.4	43.6	4 35.30	3 40.378			
	Weisse 0, 733 . .	27.2	35.6	43.8	5 35.53	1 45.991	+0 49.14	— 24.348	
	Eurynome . . .	16.4	24.6	33.0	6 24.67	3 40.423			
Oct. 12	Eurynome . . .	36.1	44.1	52.8	20 52 44.33	2 36.703			m. s.
	Weisse 0, 742 .	27.8	36.2	44.6	54 36.20	2 42.570	—1 51.87	+ 5.867	Corr. Chron. + 3 35.59
F.	Eurynome . . .	43.2	51.4	59.6	55 51.40	2 36.792			α δ h. m. s. ° ′ ″
	Weisse 0, 742 . .	35.3	43.5	51.6	57 43.47	2 42.746	1 52.07	5.954	Weisse 0, 742, 0 43 28.03 + 6 22 10.59
	Eurynome . . .	51.8	0.2	8.4	59 0.13	2 36.861			Eurynome—Weisse 0, 742,
	Weisse 0, 742 . .	43.8	51.9	0.4	21 0 52.03	2 42.968	1 51.90	6.107	△ α △ δ h. m. s. m. s. ′ ″
	Eurynome . . .	48.9	57.1	5.3	1 57.10	2 37.265			Sid. T. 21 25 20.97 — 1 52.69 + 1 20.42
	Weisse 0, 742 . .	40.5	49.0	56.7	3 48.73	2 43.080	1 51.63	5.815	Δ ρ .00 + .04 p — .33 + 4.77
	Eurynome . . .	59.3	7.4	15.7	5 7.47	2 37.651			
	Weisse 0, 742 . .	51.4	59.5	7.9	6 59.60	2 43.231	1 52.13	5.580	
	Eurynome . . .	53.8	2.0	10.3	8 2.03	2 37.720			
	Weisse 0, 742 . .	45.9	54.3	2.5	9 54.23	2 43.282	1 52.20	5.562	
	Eurynome . . .	50.5	58.5	6.8	10 58.60	2 37.837			
	Weisse 0, 742 . .	42.6	51.0	59.2	12 50.93	2 43.350	1 52.33	5.513	
	Eurynome . . .	53.5	1.6	10.3	14 1.80	2 38.050			
	Weisse 0, 742 . .	45.8	54.1	2.2	15 54.03	2 43.498	1 52.23	5.448	
	Eurynome . . .	2.0	10.2	18.4	17 10.20	2 38.206			
	Weisse 0, 742 . .	54.5	2.5	11.2	19 2.73	2 43.694	1 52.53	5.488	
	Eurynome . . .	54.5	2.3	10.6	20 2.47	2 38.530			
	Weisse 0, 742 . .	47.0	55.0	3.4	21 55.13	2 43.769	1 52.66	5.239	
	Eurynome . . .	5.6	13.9	22.3	23 13.93	2 38.722			
	Weisse 0, 742 . .	58.3	6.8	14.9	25 6.67	2 43.902	1 52.74	5.180	
	Eurynome . . .	7.6	15.9	24.2	26 15.90	2 38.899			
	Weisse 0, 742 . .	. .	. .	17.0	28 8.67	2 43.859	1 52.77	4.960	
	Eurynome . . .	24.3	32.4	40.7	29 32.47	2 38.952			
	Weisse 0, 742 . .	17.2	25.5	33.5	31 25.40	2 44.022	1 52.93	5.070	
	Eurynome . . .	20.9	28.9	37.3	32 29.03	2 39.174			
	Weisse 0. 742 . .	13.9	22.1	30.6	34 22.20	2 44.070	1 53.17	4.896	
	Eurynome . . .	17.9	26.0	34.4	35 26.10	2 39.339			
	Weisse 0, 742 . .	11.0	19.2	27.6	37 19.27	2 44.308	1 53.17	4.969	
	Eurynome . . .	21.8	29.7	38.2	38 29.90	2 39.625			
	Weisse 0, 742 . .	14.6	22.7	31.4	40 22.90	2 44.360	1 53.00	4.735	
	Eurynome . . .	31.9	40.0	48.3	41 40.07	2 39.722			
	Weisse 0, 742 . .	25.3	33.6	41.7	43 33.53	2 44.409	1 53.46	4.687	
	Eurynome . . .	30.5	39.0	47.2	44 38.90	2 39.815			
	Weisse 0,742 . .	24.0	32.1	40.6	46 32.23	2 44.502	1 53.33	4.687	
	Eurynome . .	32.8	40.9	49.3	47 41.00	2 40.127			
	Weisse 0,742 . .	26.3	34.3	43.0	49 34.53	2 44.638	—1 53.53	+ 4.511	

EURYNOME.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
t. 12	Eurynome . . .	36.4	44.6	52.6	21 50 44.53	2 40.049			
	Weisse 0,742 . . .	30.3	38.4	47.0	52 38.57	2 44.662	—1 54.04	+ 4.613	
F.									
t. 13	Eurynome . . .	1.0	9.3	17.8	21 58 9.37	5 28.504			m. s. Corr. Chron. + 3 36.05 α δ h. m. s. ° ′ ″ Weisse 0,742 0 43 28.03 + 6 22 10.62 Eurynome—Weisse 0,742 Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 22 20 51.97 — 2 39.64 — 7 43.33 Δ ρ .00 — .23 p — .26 + 4.67
	Weisse 0,742 . .	40.0	48.2	56.6	22 0 48.27	2 41.607	—2 38.90	— 29.767	
H.	Eurynome . . .	15.9	24.0	32.3	2 24.07	5 28.693			
	Weisse 0,742 . .	54.9	3.1	11.4	5 3.13	2 41.660	2 39.06	29.903	
	Eurynome . . .	31.7	40.3	48.6	6 40.20	4 45.974			
	Weisse 0,742 . .	11.1	19.5	27.8	9 19.47	2 41.750	2 39.27	30.086	
	Eurynome . . .	25.4	33.7	42.1	10 33.73	5 29.044			
	Weisse 0,742 . .	5.0	13.2	21.7	13 13.30	2 41.867	2 39.57	30.047	
	Eurynome . . .	16.0	24.3	32.7	15 24.33	5 29.274			
	Weisse 0,742 . .	55.6	4.0	12.2	18 3.93	2 41.991	2 39.60	30.153	
	Eurynome . . .	3.9	12.1	20.6	19 12.20	5 29.496			
	Weisse 0,742 . .	43.7	51.9	0.3	21 51.97	2 42.070	2 39.77	30.296	
	Eurynome . . .	59.1	7.2	15.6	24 7.30	5 29.706			
	Weisse 0,742 . .	38.9	47.1	55.5	26 47.17	2 42.158	2 39.87	30.418	
	Eurynome . . .	51.1	59.2	7.8	27 59.37	5 29.789			
	Weisse 0,742 . .	31.0	39.3	47.7	30 39.33	2 42.286	2 39.96	30.373	
	Eurynome . . .	41.8	50.0	58.3	31 50.03	5 29.945			
	Weisse 0,742 . .	21.8	30.0	38.5	34 30.10	2 42.296	2 40.07	30.519	
	Eurynome . . .	10.3	18.6	27.0	36 18.63	5 30.114			
	Weisse 0,742 . .	50.6	58.9	7.3	38 58.93	2 42.453	—2 40.30	— 30.531	
. 17	Weisse 0,616 . .	8.2	16.4	24.9	2 31 16.50	2 33.046	+1 31.50	— 43.034	m. s. Corr. Chron. + 3 37.48 α δ h. m. s. ° ′ ″ Weisse 0,616, 0 36 16.71 + 5 49 34.46 Eurynome—Weisse 0,616, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 2 51 47.33 + 1 30.94 —11 5.99 Δ ρ .00 — .30 p + .24 + 4.71
	Eurynome . . .	39.8	48.0	56.2	32 48.00	5 33.210			
H.	Weisse 0,616 . .	36.4	44.8	53.1	34 44.77	2 32.973	1 31.30	43.202	
	Eurynome . . .	8.0	15.9	24.3	36 16.07	5 33.305			
	Weisse 0,616 . .	18.0	26.4	34.7	38 26.37	2 33.024	1 31.13	43.202	
	Eurynome . . .	49.2	57.4	5.9	39 57.50	5 33.356			
	Weisse 0,616 . .	26.1	34.5	43.0	41 34.53	2 32.958	1 31.04	43.316	
	Eurynome . . .	57.3	5.6	13.8	43 5.57	5 33.404			
	Weisse 0,616 . .	28.5	36.7	45.2	45 36.80	2 32.972	1 30.97	43.393	
	Eurynome . . .	59.6	7.7	16.0	47 7.77	5 33.495			
	Weisse 0,616 . .	19.4	27.8	36.2	48 27.80	2 32.968	1 30.97	43.472	
	Eurynome . . .	50.5	58.7	7.1	49 58.77	5 33.570			
	Weisse 0,616 . .	18.0	26.3	34.7	51 26.33	2 32.976	1 30.84	43.600	
	Eurynome . . .	49.0	57.1	5.4	52 57.17	5 33.706			
	Weisse 0,616 . .	9.9	18.2	26.7	55 18.27	2 32.979	1 30.73	43.570	
	Eurynome . . .	40.8	49.0	57.2	56 49.00	5 33.679			
	Weisse 0,616 . .	7.7	16.0	24.5	58 16.07	2 32.877	1 30.46	43.613	
	Eurynome . . .	38.2	46.5	54.9	2 59 46.53	5 33.620			
	Weisse 0,616 . .	13.3	21.6	30.0	3 1 21.63	2 32.893	1 30.47	43.823	
	Eurynome . . .	43.9	52.0	0.4	2 52.10	5 33.846			
. 18	Santini 39 . . .	45.0	53.2	1.6	22 10 53.27	4 35.362	0 43.43	27.667	m. s. Corr. Chron. + 3 37.80 α δ h. m. s. ° ′ ″ Santini 39, 0 36 31.32 + 5 24 42.04 (Continued.)
	Eurynome . . .	. .	36.7	45.0	11 36.70	2 33.557			
I.	Santini 39 . . .	31.4	39.6	48.1	12 39.70	4 35.403	+0 43.27	— 27.657	
	Eurynome . . .	14.7	23.0	31.2	13 22.97	2 33.608			

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1863. Oct. 18	Santini 39 . . .	49.1	57.5	5.7	22 14 57.43	4 35.434	+0 43.20	+ 27.560	Eurynome—Santini 39,
H.	Eurynome . . .	32.3	40.6	49.0	15 40.63	2 33.736			Δ α Δ δ h. m. s. m. s. ′ ″
	Santini 39 . . .	55.8	4.1	12.4	17 4.10	4 35.486	0 43.17	27.569	Sid. T. 22 20 17.12 + 0 43.22 + 7 2.57
	Eurynome . . .	39.0	47.2	55.6	17 47.27	2 33.779			Δ ρ .00 + .20 p — .25 + 4.73
	Santini 39 . . .	44.0	52.3	0.6	18 52.30	4 35.545	0 43.13	27.421	
	Eurynome . . .	27.1	35.3	43.9	19 35.43	2 33.986			
	Santini 39 . . .	1.4	9.8	. .	21 9.77	4 35.607	+0 43.13	+ 27.436	
	Eurynome . . .	44.6	52.9	. .	21 52.90	2 34.033			
Oct. 19	Santini 39 . . .	6.5	14.5	22.7	21 27 14.57	2 42.979	+0 4.46	— 3.811	m. s.
F.	Eurynome . . .	10.8	19.0	27.3	27 19.03	2 46.790			Corr. Chron. + 3 38.11
	Santini 39 . . .	55.2	3.4	11.7	29 3.43	2 43.021	0 4.54	3.932	α δ h. m. s. ° ′ ″
	Eurynome . . .	59.8	7.8	16.3	29 7.97	2 46.953			Santini 39, 0 36 31.33 + 5 24 42.05
	Santini 39 . . .	46.1	54.3	2.6	31 54.33	2 43.025	0 4.50	4.046	Eurynome—Santini 39,
	Eurynome . . .	50.7	58.7	7.1	31 58.83	2 47.071			Δ α Δ δ h. m. s.
	Santini 39 . . .	33.3	41.6	49.9	33 41.60	2 43.088	0 4.47	4.120	Sid. T. 21 54 55.95 + 0 3.87 — 1 7.85
	Eurynome . . .	37.7	46.1	54.4	33 46.07	2 47.208			Δ ρ .00 — .03 p — .28 + 4.74
	Santini 39 . . .	33.5	41.7	50.1	38 41.77	2 43.242	0 4.20	4.158	
	Eurynome . . .	37.7	45.9	54.3	38 45.97	2 47.400			
	Santini 39 . . .	5.9	14.2	22.6	40 14.23	2 43.381	0 4.20	4.158	
	Eurynome . . .	10.2	18.4	26.7	40 18.43	2 47.539			
	Santini 39 . . .	37.9	46.3	54.6	41 46.27	2 43.455	0 4.33	4.158	
	Eurynome . . .	42.4	50.5	58.9	41 50.60	2 47.613			
	Santini 39 . . .	9.3	17.3	25.8	43 17.47	2 43.413	0 4.16	4.198	
	Eurynome . . .	13.2	21.6	30.1	43 21.63	2 47.611			
	Santini 39 . . .	59.7	7.9	16.5	46 8.03	2 43.491	0 3.94	4.331	
	Eurynome . . .	3.7	11.8	20.4	46 11.97	2 47.822			
	Santini 39 . . .	26.7	34.9	43.5	48 35.03	2 43.574	0 3.94	4.351	
	Eurynome . . .	30.7	38.9	47.3	48 38.97	2 47.925			
	Santini 39 . . .	8.8	16.9	25.4	50 17.03	2 43.500	0 3.87	4.422	
	Eurynome . . .	12.7	20.7	29.3	50 20.90	2 47.922			
	Santini 39 . . .	58.1	6.3	14.6	52 6.33	2 43.550	0 3.84	4.411	
	Eurynome . . .	1.8	10.1	18.6	52 10.17	2 47.961			
	Santini 39 . . .	44.7	52.9	1.2	58 52.93	2 43.832	0 3.54	4.563	
	Eurynome . . .	48.1	56.5	4.8	58 56.47	2 48.395			
	Santini 39 . . .	26.9	35.3	43.6	22 0 35.27	2 43.841	0 3.53	4.604	
	Eurynome . . .	30.5	38.7	47.2	0 38.80	2 48.445			
	Santini 39 . . .	21.8	30.3	38.5	2 30.20	2 43.862	0 3.43	4.731	
	Eurynome . . .	25.4	33.7	42.1	2 33.73	2 48.593			
	Santini 39 . . .	52.6	0.7	9.3	9 0.87	2 43.919	0 3.50	4.790	
	Eurynome . . .	56.1	4.3	12.7	9 4.37	2 48.709			
	Santini 39 . . .	56.5	4.6	13.0	10 4.70	2 44.020	0 3.33	4.793	
	Eurynome . . .	59.8	7.9	16.4	10 8.03	2 48.813			
	Santini 39 . . .	40.8	49.0	57.3	11 49.03	2 44.045	0 3.30	4.876	
	Eurynome . . .	44.1	52.3	0.6	11 52.33	2 48.921			
	Santini 39 . . .	20.5	28.8	37.3	13 28.87	2 44.086	0 3.20	5.012	
	Eurynome . . .	23.7	32.1	40.4	13 32.07	2 49.098			
	Santini 39 . . .	9.4	17.6	26.1	15 17.70	2 44.152	+0 3.20	— 5.015	
	Eurynome . . .	12.6	20.9	29.2	15 20.90	2 49.167			(Continued.)

EURYNOME.

TE.	OBJECTS.	SIDEREAL TIME.	POSITION CIRCLE.	MIC.	PLANET—STAR. P.	PLANET—STAR. Δ mic.
53.		h. m. s.	° ′	revs.	° ′	revs.
. 19	Santini 39 . . .	22 31 37.2	74 50	2 43.869	155.55	6.151
	Eurynome . . .	- - -	- -	2 50.020		
'.	Santini 39 . . .	35 42.1	74 44	2 43.369	155.49	6.020
	Eurynome . . .	- - -	- -	2 49.389		
	Santini 39 . . .	39 55.0	75 36	2 37.039	156.41	6.166
	Eurynome . . .	- - -	- -	2 43.205		
	Santini 39 . . .	50 44.8	78 31	2 37.111	159.36	6.329
	Eurynome . . .	- - -	- -	2 43.440		
	Santini 39 . . .	55 19.8	79 28	2 37.000	160.33	6.289
	Eurynome . . .	- - -	- -	2 43.289		
	Santini 39 . . .	58 18.3	81.30	2 37.683	162.35	6.202
	Eurynome . . .	- - -	- -	2 43.885		
	Santini 39 . . .	23 5 1.7	81.37	2 37.529	163.42	6.386
	Eurynome . . .	- - -	- -	2 43.915		
	Santini	- - -	83.5	2 37.461	164.10	6.412
	Eurynome . . .	- - -	- -	2 43.873		
	Santini	- - -	84.41	2 37.430	165.46	6.483
	Eurynome . . .	- - -	- -	2 43.913		
	Santini 39 . . .	10 38.7	84.53	2 37.495	165.58	6.410
	Eurynome . . .	- - -	- -	2 43.905		

RESULTS.

m. s.
Corr. Chron. + 3 38.12

Eurynome—Santini 39,

	h. m. s.	Δ α m. s.	Δ δ ′ ″
Sid. T.	22 57 49.68	+ 0 2.07	— 1 31.19
Δ ρ		.00	— .04
p		— .18	+ 4.74

T = 8°.55

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	PLANET—STAR. Δ mic.
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.
. 20	Eurynome . . .	35.6	44.0	52.3	23 14 43.97	4 44.197		
	Santini 39 . . .	13.2	21.3	29.3	15 21.27	1 48.594	—0 37.30	— 38.596
I.	Eurynome . . .	59.1	7.4	15.8	18 7.43	4 44.400		
	Santini 39 . . .	36.5	44.8	53.1	18 44.80	1 48.853	0 37.37	38.540
	Eurynome . . .	34.4	42.9	51.1	20 42.80	4 44.501		
	Santini 39 . . .	12.1	20.2	28.6	21 20.30	1 48.912	0 37.50	38.582
	Eurynome . . .	49.5	58.0	6.2	25 57.90	4 44.571		
	Santini 39 . . .	27.1	35.6	43.8	26 35.50	1 49.006	0 37.60	38.558
	Eurynome . . .	43.2	51.7	0.0	27 51.63	4 44.735		
	Santini 39 . . .	20.9	29.3	37.7	28 29.30	1 48.963	0 37.67	38.765
	Eurynome . . .	11.2	19.6	28.0	30 19.60	4 44.750		
	Santini 39 . . .	49.0	57.3	5.6	30 57.30	1 49.015	0 37.70	38.728
	Eurynome . . .	41.9	50.0	58.4	34 50.10	4 44.947		
	Santini 39 . . .	19.7	28.0	36.3	35 28.00	1 49.103	0 37.90	38.837
	Eurynome . . .	45.0	53.2	1.6	36 53.27	4 45.114		
	Santini 39 . . .	23.0	31.1	39.6	37 31.23	1 49.200	0 37.96	38.907
	Eurynome . . .	13.5	21.9	30.2	39 21.87	4 45.216		
	Santini 39 . . .	51.7	59.9	8.1	39 59.90	1 49.187	0 38.03	39.022
	Eurynome . . .	14.4	22.7	31.0	41 22.70	4 45.303		
	Santini 39 . . .	52.4	0.7	9.2	42 0.77	1 49.208	0 38.07	39.088
	Eurynome . . .	48.6	57.0	5.2	43 56.93	4 45.385		
	Santini 39 . . .	26.8	35.1	43.5	44 35.13	1 49.254	0 38.20	39.124
	Eurynome . . .	54.6	3.0	11.3	46 2.97	4 45.462		
	Santini 39 . . .	32.8	41.0	49.4	46 41.07	1 49.383	—0 38.10	— 39.072

m. s.
Corr. Chron. + 3 38.49

	α h. m. s.	δ ° ′ ″
Santini 39,	0 36 31.32	+ 5 24 42.03

Eurynome—Santini 39,

	h. m. s.	Δ α m. s.	Δ δ ′ ″
Sid. T.	23 35 19.42	— 0 37.78	— 9 55.36
Δ ρ		.00	— .23
p		— .11	+ 4.62

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.	RESULTS.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Oct. 26	Eurynome . . .	8.8	17.6	25.8	21 30 17.40	2 46.611			m. s. Corr. Chron. + 3 40.58 α δ h. m. s. ° ′ ″ Weisse 0, 556, 0 33 19.84 + 4 32 6.86 Eurynome—Weisse 0, 556, Δ α Δ δ h. m. s. m. s. ′ ″ Sid. T. 21 59 12.53 — 0 49.77 — 3 6.85 Δ ρ — .00 — .09 p — .27 + 4.73
	Weisse 0, 556 . .	. .	6.7	15.0	31 6.55	1 52.056	—0 49.15	— 11.686	
F.	Eurynome . . .	3.4	11.6	19.7	33 11.37	2 46.921			
	Weisse 0, 556 . .	52.8	0.8	8.8	34 0.80	1 52.241	0 49.23	11.811	
	Eurynome . . .	25.5	33.6	41.7	36 33.60	2 46.974			
	Weisse 0, 556 . .	. .	23.1	31.5	37 23.25	1 52.261	0 49.65	11.844	
	Eurynome . . .	3.1	11.3	19.6	39 11.33	2 47.050			
	Weisse 0, 556 . .	52.4	0.7	8.9	40 0.67	1 52.458	0 49.34	11.723	
	Eurynome . . .	59.3	7.9	15.9	41 7.70	2 47.260			
	Weisse 0, 556 . .	48.9	57.1	5.4	41 57.13	1 52.411	0 49.43	11.980	
	Eurynome . . .	59.6	8.1	16.4	43 8.03	2 47.262			
	Weisse 0, 556 . .	49.4	57.8	5.9	43 57.70	1 52.431	0 49.67	11.962	
	Eurynome . . .	33.4	41.6	50.1	45 41.70	2 47.461			
	Weisse 0, 556 . .	23.3	31.4	39.6	46 31.43	1 52.599	0 49.73	11.993	
	Eurynome . . .	19.1	. .	36.1	48 27.60	2 47.561			
	Weisse 0, 556 . .	9.5	17.6	21.0	49 17.70	1 52.618	0 50.10	12.074	
	Eurynome . . .	33.1	41.2	49.7	50 41.33	2 47.745			
	Weisse 0, 556 . .	22.8	30.8	39.4	51 31.00	1 52.821	0 49.67	12.055	
	Eurynome . .	3.3	11.6	19.6	53 11.50	2 47.875			
	Weisse 0, 556 . .	. .	1.2	9.5	54 1.25	1 52.849	0 49.75	12.157	
	Eurynome . . .	40.6	49.1	57.3	55 49.00	2 47.827			
	Weisse 0, 556 . .	30.4	38.5	47.3	56 38.73	1 52.843	0 49.73	12.115	
	Eurynome . . .	58.5	6.4	14.8	58 6.57	2 48.081			
	Weisse 0, 556 . .	47.9	56.6	4.9	58 56.47	1 52.972	0 49.90	12.240	
	Eurynome . . .	1.3	9.4	17.8	22 2 9.50	1 48.010			
	Weisse 0, 556 . .	51.2	59.6	7.8	2 59.53	1 52.848	0 50.03	12.293	
	Eurynome . . .	49.2	. .	5.4	5 57.30	2 48.301			
	Weisse 0, 556 . .	39.3	47.3	53.4	6 47.33	1 52.920	0 50.03	12.512	
	Eurynome . . .	23.3	31.6	39.7	8 31.53	2 48.501			
	Weisse 0, 556 . .	13.4	21.7	39.8	9 21.63	1 53.140	0 50.10	12.492	
	Eurynome . . .	12.9	20.9	29.5	11 21.10	2 48.493			
	Weisse 0, 556 . .	2.9	11.3	19.5	12 11.23	1 53.155	0 50.13	12.469	
	Eurynome . . .	36.6	44.8	53.2	13 44.87	2 48.595			
	Weisse 0, 556 . .	. .	35.1	43.2	14 35.03	1 53.241	0 50.16	12.485	
	Eurynome . . .	35.4	43.7	52.2	15 43.77	2 48.800			
	Weisse 0, 556 . .	25.6	33.7	42.3	16 33.87	1 53.352	0 50.10	12.579	
	Eurynome . . .	43.6	51.8	0.3	17 51.90	2 48.853			
	Weisse 0, 556 . .	33.7	41.9	50.6	18 42.07	1 53.458	0 50.17	12.526	
	Eurynome . . .	43.1	51.6	59.9	19 51.53	2 48.942			
	Weisse 0, 556 . .	33.6	42.0	50.2	20 41.93	1 53.402	—0 50.40	— 12.671	
Oct. 27	Weisse 0, 506 . .	22.2	30.6	39.0	22 44 30.60	4 35.393	+1 37.40	+ 17.813	
	Weisse 0, 511 . .	4.1	12.5	20.7	45 12.43	2 38.306	+0 55.57	— 5.136	
	Eurynome . . .	. .	8.0	16.3	46 8.00	2 43.442			
H.	Weisse 0, 506 . .	54.3	2.6	10.9	48 2.60	4 35.338	1 37.33	17.814	
	Weisse 0, 511 . .	36.1	44.4	52.9	48 44.47	2 38.373	0 55.46	5.013	
	Eurynome . . .	31.6	39.9	48.3	49 39.93	2 43.386			
	Weisse 0, 506 . .	25.2	33.4	41.8	51 33.47	4 35.409	1 37.30	17.638	
	Weisse 0, 511 . .	7.1	15.3	23.6	52 15.33	2 38.386	0 55.44	5.247	
	Eurynome . . .	2.6	10.7	19.0	53 10.77	2 43.633			(Continued.)

EURYNOME.

E.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δα	Δ mic.	
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
27	Weisse 0, 506 . .	52.4	0.7	8.9	22 55 0.67	4 35.400	+1 37.30	+ 17.490	m. s. Corr. Chron. + 3 40.99 α δ h. m. s. ° ′ ″ Weisse 0, 506, 0 30 22.16 + 4 17 4.96 Weisse 0, 511, 0 31 4.09 + 4 22 58.75 Eurynome—Weisse 0, 506, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 23 12 25.85 + 1 36.91 + 4 26.21 Δρ .00 + .12 *p* — .14 + 4.67 Eurynome—Weisse 0, 511, h. m. s. Sid. T. 23 12 25.85 + 0 55.04 — 1 24.35 Δρ .00 — .03 *p* — 14 + 4.67
	Weisse 0, 511 . .	34.1	42.4	50.9	55 42.47	2 38.479	+0 55.50	— 5.293	
	Eurynome . . .	29.7	38.0	46.2	56 37.97	2 43.772			
	Weisse 0, 506 . .	22.6	30.8	39.1	22 59 30.83	4 35.506	1 37.04	17.531	
	Weisse 0, 511 . .	4.4	12.7	21.0	23 0 12.70	2 38.524	0 55.17	5.313	
	Eurynome . . .	59.5	7.9	16.2	1 7.87	2 43.837			
	Weisse 0, 506 .	52.9	1.1	9.6	11 1.20	3 48.728	1 36.77	17.273	
	Weisse 0, 511 . .	34.8	43.0	51.2	11 43.00	2 38.690	0 54.97	5.550	
	Eurynome . . .	29.7	38.0	46.2	12 37.97	2 44.240			
	Weisse 0, 506 .	20.6	28.8	37.1	14 28.83	3 48.804	1 36.70	17.282	
	Weisse 0, 511 . .	2.4	10.6	19.0	15 10.67	2 38.700	0 54.86	5.607	
	Eurynome . . .	57.3	5.4	13.9	16 5.53	2 44.307			
	Weisse 0, 506 . .	26.1	34.4	42.7	25 34.40	3 48.900	1 36.57	16.882	
	Weisse 0, 511 . .	8.1	16.3	24.8	26 16.40	2 38.762	0 54.57	6.041	
	Eurynome . . .	2.7	11.0	19.2	27 10.97	2 44.803			
	Weisse 0, 506 . .	54.7	3.0	11.2	29 2.97	3 48.968	1 36.46	16.958	
	Weisse 0, 511 . .	36.6	44.9	53.2	29 44.90	2 38.919	0 54.53	5.876	
	Eurynome . . .	31.1	39.3	47.9	30 39.43	3 32.010			
	Weisse 0, 506 . .	25.6	33.9	42.1	32 33.87	3 49.015	+1 36.26	+ 16.888	
	Weisse 0, 511 . .	7.5	15.9	24.1	33 15.83	2 38.989	+0 54.30	- 5.923	
	Eurynome . . .	1.9	10.1	18.4	34 10.13	2 44.912			
28	Weisse 0, 506 . .	39.8	48.0	56.3	1 27 48.00	3 31.440	+1 5.94	— 12.540	m. s. Corr. Chron. + 3 41.20 α δ h. m. s. ° ′ ″ Weisse 0, 506, 0 30 22.16 + 4 17 4.94 Eurynome—Weisse 0, 506, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 1 32 57.06 + 1 5.93 — 3 14.75 Δρ .00 — .08 *p* — .11 + 4.62
	Weisse 0, 509 . .	52.9	0.9	9.2	28 1.00	3 37.022			
	Weisse 0, 511 . .	21.4	29.6	37.9	28 29.63	1 38.303			
	Eurynome . . .	45.7	54.1	2.1	28 53.97	3 43.980			
	Weisse 0, 506 . .	50.1	58.2	6.7	29 58.33	2 44.079	1 6.30	12.644	
	Eurynome . . .	56.2	4.7	13.0	31 4.63	3 43.938			
	Weisse 0, 506 . .	50.5	58.5	7.2	36 58.73	2 44.210	1 6.10	12.633	
	Eurynome . . .	56.5	4.6	13.3	38 4.83	3 44.058			
	Weisse 0, 506 . .	29.5	37.6	45.8	39 37.63	2 44.080	1 5.97	12.664	
	Eurynome . . .	35.6	43.4	51.8	40 43.60	3 43.959			
	Weisse 0, 506 . .	48.5	56.6	5.1	41 56.73	2 44.161	1 5.97	12.835	
	Eurynome . . .	54.5	2.5	11.1	43 2.70	3 44.211			
	Weisse 0, 506 . .	56.3	4.5	12.6	44 4.47	2 44.312	1 5.63	12.753	
	Eurynome . . .	1.9	10.1	18.3	45 10.10	3 44.280			
	Weisse 0, 506 . .	37.2	45.5	54.1	46 45.60	2 44.152	+1 5.60	— 12.828	
	Eurynome . . .	42.9	51.1	59.6	47 51.20	3 44.195			
31	Eurynome . . .	27.6	36.1	44.2	22 37 35.97	4 43.403			m. s. Corr. Chron. + 3 42.24 α δ h. m. s. ° ′ ″ Weisse 0, 571, 0 33 59.28 + 4 1 23.78 Eurynome—Weisse 0, 571, Δα Δδ h. m. s. m. s. ′ ″ Sid. T. 22 59 32.32 — 3 41.49 — 6 28.09 Δρ .00 — .17 *p* — .17 + 4.64
	Weisse 0, 571 . .	9.0	17.1	25.6	41 17.23	2 44.324	—3 41.26	— 24.941	
	Eurynome . . .	12.8	21.1	29.4	43 21.10	4 43.637			
	Weisse 0, 571 . .	54.2	2.4	10.7	47 2.43	2 44.368	3 41.33	25.131	
	Eurynome . . .	25.0	33.2	41.6	49 33.27	4 43.859			
	Weisse 0, 571 . .	6.5	14.6	23.0	53 14.70	2 44.630	3 41.43	25.091	
	Eurynome . . .	3.1	11.6	19.8	56 11.50	4 44.152			
	Weisse 0, 571 . .	44.7	53.0	1.3	22 59 53.00	2 44.705	3 41.50	25.309	
	Eurynome . . .	30.9	39.1	47.6	23 2 39.20	4 44.366			
	Weisse 0, 571 . .	12.6	20.8	29.1	6 20.83	2 44.826	3 41.63	25.402	
	Eurynome . . .	42.9	51.2	59.5	7 51.20	4 44.537			
	Weisse 0, 571 . .	24.4	32.8	41.0	11 32.73	2 44.819	3 41.53	25.580	
	Eurynome . . .	30.0	38.3	46.6	13 38.30	4 44.784			
	Weisse 0, 571 . .	11.8	20.1	28.3	17 20.07	2 44.971	—3 41.77	— 25.675	

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Nov. 2	Weisse 0, 477 . .	57.5	5.4	13.7	22 42 5.53	55.640	+1 7.37	+ 39.579	m. s. Corr. Chron. + 3 43.59
	Eurynome . . .	4.5	12.9	21.3	43 12.90	16.061			α δ
F.	Weisse 0, 477 . .	47.8	56.3	4.5	46 56.20	55.571	1 7.37	39.249	h. m. s. ° ′ ″
	Eurynome . . .	55.3	3.6	11.8	48 3.57	16.322			Weisse 0, 477, 0 28 30.83 + 3 32 49.23
	Weisse 0, 477 . .	4.8	13.2	21.3	50 13.10	55.678	1 7.17	39.350	Eurynome—Weisse 0, 477,
	Eurynome . . .	12.1	20.2	28.5	51 20.27	16.328			Δα Δδ h. m. s. m. s. ′ ″
	Weisse 0, 477 . .	20.3	28.4	36.5	53 28.40	55.739	1 7.27	39.289	Sid. T. 23 11 23.98 + 1 7.06 + 9 58.57
	Eurynome . . .	27.5	35.6	43.9	54 35.67	16.450			Δρ .00 + .27
	Weisse 0, 477 . .	57.3	5.5	13.8	56 5.53	55.755	1 7.34	39.314	p − .14 + 4.62
	Eurynome . . .	4.5	12.8	21.3	57 12.87	16.441			
	Weisse 0, 477 . .	20.8	29.2	37.5	59 29.17	55.891	1 7.23	39.211	
	Eurynome . . .	28.3	36.2	44.7	23 0 36.40	16.680			
	Weisse 0, 477 . .	46.5	54.7	3.0	1 54.73	55.908	1 7.10	39.155	
	Eurynome . . .	53.6	1.7	10.2	3 1.83	16.753			
	Weisse 0, 477 . .	32.4	40.6	49.1	7 40.70	56.149	1 6.93	39.019	
	Eurynome . . .	39.4	47.7	55.8	8 47.63	17.130			
	Weisse 0, 477 . .	39.2	47.6	55.8	11 47.53	56.305	1 6.94	38.995	
	Eurynome . . .	46.3	54.3	2.8	12 54.47	17.310			
	Weisse 0, 477 . .	26.5	34.6	43.2	14 34.77	56.288	1 7.03	38.868	
	Eurynome . . .	33.6	41.8	50.0	15 41.80	17.420			
	Weisse 0, 477 . .	42.2	50.4	58.7	17 50.43	5 41.539	1 7.07	38.750	
	Eurynome . . .	49.2	57.4	5.9	18 57.50	2 45.659			
	Weisse 0, 477 . .	11.5	19.7	. .	26 19.77	5 41.619	1 6.70	38.569	
	Eurynome . . .	18.2	26.4	34.8	27 26.47	2 45.920			
	Weisse 0, 477 . .	12.8	21.3	29.5	30 21.20	5 41.779	1 6.60	38.619	
	Eurynome . . .	. .	27.8	36.2	31 27.80	2 46.030			
	Weisse 0, 477 . .	51.3	59.6	7.8	32 59.57	5 41.880	+1 6.70	+ 38.428	
	Eurynome . . .	58.0	. .	. .	34 6.27	2 46.322			
Nov. 13	Santini 30 . . .	53.0	1.3	9.5	23 39 1.26	5 49.820	+1 13.31	+ 73.723	m. s. Corr. Chron. + 3 50.28
	Eurynome . . .	6.4	14.6	22.7	40 14.57	1 36.098			α δ
F.	Santini 30 . . .	54.5	2.6	11.3	42 2.80	5 49.810	1 13.43	73.455	h. m. s. ° ′ ″ Santini 30, 0 26 56.45 + 2 34 19.78
	Eurynome . . .	8.0	16.1	24.6	43 16.23	1 36.356			Eurynome—Santini 30,
	Santini 30 . . .	36.6	44.7	53.3	56 44.87	5 49.815	1 13.68	73.196	Δα Δδ h. m. s. m. s. ′ ″
	Eurynome . . .	50.3	. .	6.8	57 58.55	1 36.620			Sid. T. 0 7 58.24 + 1 13.55 +18 43.76
	Santini 30 . . .	38.4	46.5	55.0	0 4 46.63	5 49.810	1 13.40	73.162	Δρ .00 + .48
	Eurynome . . .	57.9	0.2	8.0	6 0.03	1 36.649			p − .03 + 4.41
	Santini 30 . . .	48.4	56.6	4.9	7 56.63	5 49.920	1 13.64	73.366	
	Eurynome . . .	2.3	10.3	18.2	9 10.27	1 36.555			
	Santini 30 . . .	35.3	43.6	51.9	11 43.60	5 50.012	1 13.53	73.224	
	Eurynome . . .	48.9	57.2	5.3	12 57.13	1 36.789			
	(*11)	1.1	9.1	17.4	13 9.20	1 44.835			
	Santini 30 . . .	14.8	23.1	31.6	17 23.17	5 49.912	1 13.70	73.015	
	Eurynome . . .	28.5	36.9	45.2	18 36.87	1 36.898			
	(* 11)	40.7	48.9	. .	18 49.00	1 45.249			
	Santini 30 . . .	36.8	44.9	53.5	23 45.07	5 50.010	+1 13.73	+ 73.031	
	Eurynome . . .	50.5	58.8	7.1	24 58.80	1 36.980			
	(* 11)	. .	. .	19.4	25 11.10	1 45.469			
Nov. 18	Santini 30 . . .	53.5	1.7	10.1	0 57 1.77	4 40.105	reject.	+ 24.405	
	Eurynome . . .	45.2	53.7	1.8	58 53.57	2 41.562			
F.									(Continued.)

EURYNOME.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	m. s.
r. 18	Santini 30 . . .	4.6	12.8	21.2	1 3 12.87	4 40.008	+1 53.00	+ 24.270	Corr. Chron. + 3 51.39
	Eurynome . . .	57.6	5.8	14.2	5 5.87	2 41.600			α δ h. m. s. ° ′ ″
	Santini 30 . . .	57.1	5.0	13.5	6 5.20	4 40.091	1 52.80	24.532	Santini 30, 0 26 56.4 + 2 34 19.46
	(* 9)	40.1	48.5	56.4	7 48.33	4 39.235	0 9.67	23.676	
	Eurynome . . .	49.7	58.0	6.3	7 58.00	2 41.421			Eurynome—Santini 30, Δ α Δ δ
	Santini 30 . . .	40.7	48.8	57.4	9 48.97	4 40.061	1 53.05	24.471	h. m. s.
	(* 9)	24.2	32.3	40.6	11 32.37	4 39.290	0 9.65	23.700	Sid. T. 1 27 57.55 + 1 52.99 + 6 15.24
	Eurynome . . .	. .	41.9	50.3	11 42.02	2 41.452			Δ ρ .00 + .16 p — .08 + 4.32
	Santini 30 . . .	16.4	24.3	32.8	14 24.50	4 39.749	1 52.93	24.500	Eurynome—(*127,)
	(* 9)	59.5	7.6	16.1	16 7.40	4 38.989	0 10.03	23.740	h. m. s.
	Eurynome . . .	9.3	17.5	25.5	16 17.43	2 41.111			Sid. T. 1 38 29.59 + 0 9.84 + 6 0.63
	Santini 30 . . .	53.2	1.5	9.7	18 1.47	4 39.927	1 52.83	24.620	The star (9) is a double star; also (* 127 W.)
	(* 9)	36.3	44.8	52.9	19 44.67	4 39.041	0 9.63	23.734	
	Eurynome . . .	46.1	54.3	2.5	19 54.30	2 41.169			
	Santini 30 . . .	39.2	47.3	55.7	21 47.40	4 39.816	1 52.87	24.558	
	(* 9)	21.9	30.3	38.8	23 30.33	4 39.100	0 9.94	23.842	
	Eurynome . . .	32.1	40.2	48.5	23 40.27	2 41.120			
	Santini 30 . . .	28.0	36.1	44.5	25 36.20	4 39.892	1 52.93	24.624	
	(* 9)	11.3	19.3	27.7	27 19.43	4 39.140	0 9.70	23.872	
	Eurynome . . .	20.9	29.1	. .	27 29.13	2 41.130			
	Santini 30 . . .	11.3	19.5	27.9	30 19.57	4 39.900	1 53.06	24.334	
	(* 9)	54.5	2.7	11.1	32 2.77	4 39.028	0 9.86	23.462	
	Eurynome . . .	4.3	12.5	21.1	32 12.63	2 41.428			
	Santini 30 . . .	27.2	35.4	43.6	34 35.40	4 39.800	1 53.00	24.327	
	(* 9)	10.5	18.7	26.8	36 18.67	4 39.018	0 9.73	23.545	
	Eurynome . . .	20.3	28.4	36.5	36 28.40	2 41.335			
	Santini 30 . . .	10.9	19.2	27.5	38 19.20	4 39.832	1 53.27	24.328	
	(* 9)	54.2	2.6	10.7	40 2.50	4 38.925	0 9.97	23.421	
	Eurynome . . .	4.2	12.5	20.7	40 12.47	2 41.366			
	Santini 30 . . .	5.6	14.2	22.4	42 14.07	4 39.717	1 53.20	24.427	
	(* 9)	49.3	57.4	5.6	43 57.43	4 38.972	0 9.84	23.682	
	Eurynome . . .	59.2	7.3	15.3	44 7.27	2 41.152			
	(* 127 W.) . . .	36.2	44.9	52.9	47 44.67	4 38.761	0 9.96	23.253	
	Eurynome . . .	46.4	54.5	3.0	47 54.63	2 41.370			
	(* 127 W.) . . .	18.3	26.5	34.7	49 26.50	4 38.760	0 9.87	23.314	
	Eurynome . . .	28.2	36.3	44.6	49.36.37	2 41.308			
	(* 127 W.) . . .	58.0	6.3	14.5	52 6.27	4 38.810	0 9.96	23.424	
	Eurynome . . .	8.1	16.2	24.4	52 16.23	2 41.248			
	(* 127 W.) . . .	41.3	49.5	57.8	53 49.53	4 38.860	0 9.84	23.422	
	Eurynome . . .	51.2	59.2	7.7	53 59.37	2 41.300			
	(* 127 W.) . . .	26.3	34.6	42.8	55 34.57	4 38.831	0 10.00	23.424	
	Eurynome . . .	36.2	44.6	52.7	55 44.57	2 41.269			m. s. Corr. Chron. + 3 57.23
r. 30	B. A. C. 161 . .	42.5	50.9	59.5	23 56 50.97	5 34.381	3 7.16	50.891	α δ
	B. A. C. 167 . .	19.1	27.6	35.6	58 27.43	5 37.502	1 30.70	54.012	h. m. s. ° ′
	Eurynome . . .	49.9	58.3	6.2	59 58.13	1 43.491			B. A. C. 161, 0 30 31.81 +2 23 25.25 B. A. C. 167, 0 32 8.32 +2 22 32.54
	B. A. C. 161 . .	20.4	28.7	37.1	0 2 28.73	5 34.393	3 6.94	50.742	Eurynome—B. A. C. 161,
	B. A. C. 167 . .	56.6	5.0	13.3	4 4.97	5 37.741	1 30.70	54.090	Δ α Δ δ
	Eurynome . . .	27.5	35.6	43.9	5 35.67	1 43.652			h. m. s. Sid. T. 0 28 36.44 + 3 7.64 +13 0.37
	B. A. C. 161 . .	9.8	. .	26.6	7 18.20	5 34.630	3 7.20	50.838	Δ ρ + .00 + .33
	B. A. C. 167 . .	46.2	54.6	. .	8 54.60	5 37.882	1 30.80	54.090	p + .00 + 4.27
	Eurynome . . .	17.2	25.3	33.7	10 25.40	1 43.793			Eurynome—B. A. C. 167, h. m. s.
	B. A. C. 161 . .	17.3	25.9	34.1	12 25.77	5 34.741	3 7.30	51.027	Sid. T. 0 28 36.44 + 1 31.18 +13 50.73
	B. A. C. 167 . .	53.9	2.3	10.7	14 2.30	5 37.895	+1 30.77	+ 54.181	Δ ρ + .00 + .36
	Eurynome . . .	24.7	33.2	11.3	15 33.07	1 43.715			p + .00 + 4.27 (Continued.)

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δ α	Δ mic.	RESULTS.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Nov. 30	B. A. C. 161 . .	37.9	45.9	54.6	0 17 46.13	5 34.561	+3 7.47	+ 50.733	
	B. A. C. 167 . .	14.3	22.6	30.9	19 22.60	5 37.958	1 31.00	54.130	
F.	Eurynome . . .	45.4	53.6	1.8	20 53.60	1 43.829			
	B. A. C. 161 . .	30.4	38.6	47.1	26 38.70	5 34.829	3 7.93	50.949	
	B. A. C. 167 . .	7.0	15.2	23.6	28 15.27	5 38.039	1 31.36	54.159	
	Eurynome . . .	38.4	46.7	54.8	29 46.63	1 43.881			
	B. A. C. 161 . .	51.4	59.7	8.0	30 59.70	5 34.881	3 8.00	51.119	
	B. A. C. 167 . .	27.9	35.9	44.6	32 36.13	5 38.163	1 31.57	54.401	
	Eurynome . . .	59.5	7.8	15.8	34 7.70	1 43.763			
	B. A. C. 161 . .	31.9	40.1	48.4	35 40.13	5 34.825	3 8.10	50.816	
	B. A. C. 167 . .	8.3	16.7	24.9	37 16.63	5 38.131	1 31.60	54.122	
	Eurynome . . .	40.1	48.2	56.4	38 48.23	1 44.010			
	B. A. C. 161 . .	6.7	15.0	23.4	40 15.03	5 34.809	3 8.14	50.985	
	B. A. C. 167 . .	43.4	51.5	59.9	41 51.60	5 38.153	1 31.57	54.329	
	Eurynome . . .	14.9	23.1	31.5	43 23.17	1 43.825			
	B. A. C. 161 . .	44.5	52.8	0.9	44 52.73	5 34.681	3 8.20	50.697	
	B. A. C. 167 . .	21.0	29.2	27.4	46 29.20	5 38.119	1 31.73	54.135	
	Eurynome . . .	52.6	0.9	9.3	48 0.93	1 43.985			
Dec. 1	B. A. C. 167 . .	4.2	12.5	21.0	23 50 12.57	5 40.617	2 6.20	58.849	m. s. Corr. Chron. + 3 57.77
	Eurynome . . .	10.5	18.8	27.0	52 18.77	1 41.769			α δ h. m. s. ° ′ ″
H.	B. A. C. 167 . .	21.8	30.1	38.4	53 30.10	5 40.669	2 6.13	58.899	B. A. C. 167, 0 32 8.31 +2 22 32.47
	Eurynome . . .	28.0	36.3	44.4	55 36.23	1 41.771			Eurynome—B. A. C, 167,
	B. A. C. 167 . .	6.4	14.7	23.1	57 14.73	5 40.676	2 6.50	58.872	Δ α Δ δ
	Eurynome . . .	13.0	21.2	29.5	59 21.23	1 41.805			h. m. s. Sid. T. 0 14 10.71 + 2 6.63 +15 4.78
	B. A. C. 167 . .	21.9	30.2	38.5	0 0 30.20	5 40.802	2 6.50	59.031	Δ ρ .00 + .38
	Eurynome . . .	28.4	36.7	45.0	2 36.70	1 41.772			p — .03 + 3.93
	B. A. C. 167 . .	43.1	51.3	59.8	3 51.40	5 40.766	2 6.60	59.049	
	Eurynome . . .	49.8	58.0	6.2	5 58.00	1 41.718			
	B. A. C. 167 . .	34.2	42.4	50.9	8 42.50	5 40.869	2 6.57	59.106	
	Eurynome . . .	40.9	49.0	57.3	10 49.07	1 41.764			
	B. A. C. 167 . .	49.8	58.1	6.4	11 58.10	5 40.884	2 6.77	58.930	
	Eurynome . . .	56.7	5.0	12.9	14 4.87	1 41.955			
	B. A. C. 167 . .	30.6	39.0	47.3	15 38.97	5 40.958	2 6.83	59.008	
	Eurynome . . .	37.6	45.7	54.1	17 45.80	1 41.951			
	B. A. C. 167 . .	50.4	58.9	7.2	18 58.83	5 41.004	2 6.77	58.922	
	Eurynome . . .	57.3	. .	13.9	21 5.60	1 42.083			
	B. A. C. 167 . .	32.4	40.6	49.0	22 40.67	5 41.032	2 6.93	59.025	
	Eurynome . . .	39.4	47.6	55 8	24 47.60	1 42.008			
	B. A. C. 167 . .	43.0	51.1	59.6	25 51.23	5 41.023	2 7.17	+ 59.107	
	Eurynome . . .	50.1	58.4	6.7	27 58.40	1 41.917			
Dec. 3	Weisse O. 583 . .	41.2	49.5	57.9	23 38 49.53	1 39.770	1 7.57	— 41.533	m. s. Corr. Chron. + 3 59.39
	Eurynome . . .	48.9	57.1	5.3	39 57.10	4 38.310			α δ h. m. s. ° ′ ″
H.	Weisse. O 583 . .	48.8	57.2	5.6	43 57.20	1 39.999	1 7.70	41.352	Weisse 0, 583, 0 34 22.74 + 2 51 14.63
	Eurynome . . .	56.7	5.0	13.0	45 4.90	4 38.358			
	Weisse O. 583 . .	19.9	28.2	36.5	46 28.20	1 39.967	1 7.90	41.416	Eurynome—Weisse 0, 583,
	Eurynome . . .	27.9	36.2	44.2	47 36.10	4 38.390			Δ α Δ δ h. m. s. m. s. ′ ″
	Weisse O. 583 . .	42.5	50.7	59.1	48 50.77	1 40.093	1 7.93	41.311	Sid. T. 0 0 29.66 + 1 8.06 —10 33.73 Δ ρ .00 — .27
	Eurynome . . .	50.4	58.7	7.0	49 58.70	4 38.411			p — .05 + 3.87
	Weisse O. 583 . .	11.0	19.1	27.9	51 19.33	1 40.010	+1 8.10	— 41.353	
	Eurynome . . .	19.1	27.3	35.9	52 27.43	4 38.370			(Continued.)

EURYNOME.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
3.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
. 3	Weisse 0, 583 . .	4.0	12.1	20.6	23 54 12.23	1 40.039	+1 8.04	− 41.310	
	Eurynome . . .	12.0	20.1	28.7	55 20.27	4 38.356			
H.	Weisse 0, 583 . .	36.9	45.1	53.6	56 45.20	1 40.076	1 8.17	41.339	
	Eurynome . . .	45.1	53.1	1.9	57 53.37	4 38.422			
	Weisse 0, 583 . .	9.0	17.1	25.6	23 59 17.23	1 40.135	1 8.10	41.250	
	Eurynome . . .	17.0	25.3	33.7	0 0 25.33	4 38.392			
	Weisse 0, 583 . .	8.0	16.3	24.9	2 16.40	1 40.232	1 8.27	41.120	
	Eurynome . . .	16.3	24.6	33.1	3 24.67	4 38.359			
	Weisse 0, 583 . .	39.9	48.2	56.4	4 48.17	1 40.302	1 8.30	41.306	
	Eurynome . . .	48.2	56.4	4.8	5 56.47	4 38.615			
	Weisse 0, 583 . .	25.0	33.3	41.7	7 33.33	1 40.227	1 8.30	41.283	
	Eurynome . . .	33.3	41.6	50.0	8 41.63	4 38.517			
	Weisse 0, 583 . .	0.5	9.0	17.2	10 8.90	1 40.231	1 8.37	41.254	
	Eurynome . . .	9.0	17.2	25.6	11 17.27	4 38.492			
. 5	Weisse 0, 583 . .	52.7	0.9	9.2	0 9 0.93	2 40.632	2 32.47	25.646	m. s. Corr. Chron. + 3 59.94
	Eurynome . . .	25.0	33.3	41.9	11 33.40	4 40.396			α δ h. m. s. ° ′ ″
H.	Weisse 0, 583 . .	49.8	58.0	6.4	12 58.07	2 40.571	2 32.56	25.614	Weisse 0, 583, 0 34 22.71 + 2 51 14.40
	Eurynome . . .	22.3	30.6	39.0	15 30.63	4 40.323			Eurynome—Weisse 0, 583,
	Weisse 0, 583 . .	23.4	31.8	40.3	18 31.83	2 40.658	2 32.67	25.708	Δ α Δ δ
	Eurynome . . .	56.2	4.7	12.9	21 4.60	4 40.504			h. m. s. m. s. ′ ″ Sid. T. 0 32 44.66 + 2 32.89 − 6 33.56
	Weisse 0, 583 . .	51.8	0.0	8.4	23 0.07	2 40.720	2 32.96	25.620	Δ ρ .00 − .17
	Eurynome . . .	24.7	33.0	41.4	25 33.03	4 40.478			p .00 + 3.79
	Weisse 0, 583 . .	4.2	12.5	21.0	30 12.57	2 40.586	2 33.23	25.663	
	Eurymnoe . . .	37.5	45.9	54.0	32 45.80	4 40.387			
	Weisse 0, 583 . .	12.7	21.0	29.6	34 21.10	2 40.683	2 32.90	25.528	
	Eurynome . . .	. .	54.0	2.4	36 54.00	4 40.349			
	Weisse 0, 583 . .	38.1	46.3	54.7	38 46.37	2 40.689	2 33.13	25.425	
	Eurynome . . .	11.1	19.4	28.0	41 19.50	4 40.252			
	Weisse 0, 583 . .	35.2	43.5	52.0	42 43.57	2 40.675	+2 33.18	− 25.547	
	Eurynome . . .	8.4	. .	25.1	45 16.75	4 40.360			
14	Eurynome . . .	18.5	26.7	34.9	1 28 26.70	4 37.900			m. s. Corr. Chron. + 4 9.97
	Weisse 0, 770 . .	22.7	31.0	39.4	28 31.03	3 35.241	−0 4.33	− 15.736	α δ
.	Weisse 0, 775 . .	41.0	50.0	58.3	28 49.77	2 39.085	0 23.07	24.677	h. m. s. ° ′ ″
	Eurynome . . .	6.4	.	23.0	33 14.70	4 37.565			Weisse 0, 770, 0 44 38.53 + 3 17 00.76 Weisse 0, 775, 0 44 56.71 + 3 19 16.38
	Weisse 0, 770 .	11.0	19.3	27.3	33 19.20	3 34.949	0 4.50	15.693	
	Weisse 0, 775 . .	29.6	37.8	46.3	33 37.90	2 38.789	0 23.20	24.638	Eurynome—Weisse 0, 770,
	Eurynome . . .	30.3	38.4	46.6	36 38.43	4 37.975			Δ α Δ δ h. m. s. m. s. ′ ″
	Weisse 0, 770 . .	34.4	42.7	50.8	36 42.63	3 35.098	0 4.20	15.954	Sid. T. 1 40 46.44 − 0 4.13 − 4 1.69
	Weisse 0, 775 . .	53.0	1.3	9.8	37 1.37	2 38.985	2 22.94	24.852	Δ ρ .00 − .10
	Eurynome . . .	37.9	46.3	54.3	39 46.17	4 37.792			p + .08 + 3.57
	Weisse 0, 770 .	41.9	50.0	58.3	39 50.07	3 35.159	0 3.90	15.710	Eurynome—Weisse 0, 775,
	Weisse 0, 775 . .	0.6	8.8	17.3	40 8.90	2 38.760	0 22.73	24.894	h. m. s.
	Eurynome . .	48.4	56.4	4.3	1 44 56.37	4 37.630			Sid. T. 1 46 35.29 − 0 22.57 − 6 21.02
	Weisse 0, 770 . .	51.8	0.2	8.2	45 0.07	3 35.010	0 3.70	15.697	Δ ρ .00 − .16
	Weisse 0, 775 . .	10.3	18.5	27.0	45 18.60	2 38.670	0 22.23	24.822	p + .08 + 3.57
	Eurynome . . .	49.1	57.1	5.5	46 57.23	4 37.738			
	Weisse 0, 775 . .	11.6	19.6	27.8	47 19.67	2 38.621	0 22.44	24.979	
	Eurynome . . .	39.6	47.8	56.0	51 47.80	4 37.801			
	Weisse 0, 775 . .	1.6	10.0	18.2	52 9.97	2 38.775	−0 22.17	− 24.888	(Continued.)

EURYNOME.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT. A.	B.	C.	Mean.	MIC.	PLANET—STAR. Δα	Δ mic.	RESULTS.
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Dec. 14	Eurynome . . .	27.0	35.2	43.4	57 35.20	4 37.655			
	Weisse 0,775 . .	48.6	56.9	5.4	57 56.97	2 38.521	—0 21.77	— 24.996	
Dec. 23	Weisse 0,928 . .	36.1	44.4	53.6	2 29 44.70	1 44.896	+0 21.13	37.989	Corr. Chron. +
	Eurynome . . .	57.6	5.7	14.2	30 5.83	4 39.892			α h. m. s. °
F.	Weisse 0,928 . .	39.2	47.4	55.6	30 47.40	1 44.832	+0 21.40	38.122	Weisse 0, 928, 0 53 50.26 + 4
	Eurynome . . .	0.7	8.7	17.0	31 8.80	4 39.961			Eurynome—Weisse 0, 928,
	Weisse 0,928 . .	56.9	5.4	13.7	34 5.33	1 44.949	0 21.74	37.947	Δα h. m. s. m. s.
	Eurynome . . .	18.6	27.2	35.4	34 27.07	4 39.903			Sid. T. 3 3 15.51 + 0 22.83 —
	Weisse 0,928 . .	36.2	44.3	52.6	37 44.37	1 44.863	0 21.83	38.004	Δρ .00 —
	Eurynome . . .	58.0	5.9	14.7	38 6.20	4 39.874			*p* + .16 +
	Weisse 0,928 . .	10.9	19.3	27.6	44 19.27	1 44.865	0 22.10	37.856	
	Eurynome . . .	33.1	41.5	49.5	44 41.37	4 39.728			
	Weisse 0,928 . .	26.7	. .	43.4	57 35.05	1 44.775	0 22.92	37.677	
	Eurynome . . .	49.7	57.9	6.3	57 57.97	4 39.459			
	Weisse 0,928 . .	49.3	. .	5.6	59 57.45	1 44.781	0 22.95	37.453	
	Eurynome . . .	12.5	20.4	28.3	3 0 20.40	4 39.241			
	Weisse 9,928 . .	57.2	5.5	13.7	2 5.47	1 44.700	0 23.10	37.462	
	Eurynome . . .	20.2	28.6	36.9	2 28.57	1 39.269			
	Weisse 0,928 . .	59.9	7.9	16.4	4 8.07	1 44.690	0 23.13	37.503	
	Eurynome . . .	22.8	31.2	39.6	4 31.20	4 39.200			
	Weisse 0,928 . .	7.8	16.0	24.3	6 16.03	1 44.605	0 23.27	37.448	
	Eurynome . . .	31.0	. .	47.6	6 39.30	4 39.060			
	Weisse 0,928 . .	5.9	14.2	22.7	13 14.27	1 44.612	0 23.38	37.381	
	Eurynome . . .	29.4	. .	45.9	13 37.65	4 39.000			
	77 Piscium . . .	4.2	12.4	20.6	17 12.40	1 25.055			
		6.4	14.6	22.9	17 14.63	1 24.772			
	Weisse 0,928 . .	54.5	2.8	11.2	21 2.83	1 44.501	0 24.07	37.470	
	Eurynome . . .	18.5	27.2	35.0	21 26.90	4 38.978			
	Weisse 0,928 . .	40.1	48.4	56.7	27 48.40	1 44.588	0 24.40	37.210	
	Eurynome . . .	4.7	12.9	20.8	28 12.80	4 38.805			
	Weisse 0,928 . .	46.0	54.2	2.5	30 54.23	1 44.534	0 24.17	37.469	
	Eurynome . . .	10.2	18.4	26.6	31 18.40	4 39.010			
Dec. 24	Weisse 0,928 . .	14.5	22.8	31.1	2 0 22.80	4 36.370	1 30.27	16.482	
	Eurynome . . .	44.7	53.2	1.3	1 53.07	2 45.750			Corr. Chron. +
H.	Weisse 0,928 . .	13.1	21.8	30.0	4 21.63	4 36.294	1 30.44	16.544	α h. m. s. °
	Eurynome . . .	43.9	51.9	0.4	5 52.07	2 45.612			Weisse 0, 928, 0 53 50.25 + 4
	Weisse 0,928 . .	59.6	8.0	16.3	8 7.97	4 36.367	1 30.56	16.491	Eurynome—Weisse 0, 928,
	Eurynome . . .	30.2	38.7	46.7	9 38.53	2 45.738			Δα h. m. s. m. s.
	Weisse 0,928 . .	2.4	10.6	18.9	11 10.63	4 36.385	1 30.64	16.444	Sid. T. 2 18 46.06 + 1 30.86 —
	Eurynome . . .	33.0	41.1	49.7	12 41.27	2 45.803			Δρ .00 —
	Weisse 0,928 . .	44.4	52.6	1.0	14 52.67	4 36.414	1 31.10	16.506	*p* + .10 +
	Eurynome . . .	15.3	24.0	32.0	16 23.77	2 45.770			
	Weisse 0,928 . .	57.2	5.7	13.8	18 5.57	4 36.323	1 31.26	16.495	
	Eurynome . . .	28.4	36.9	45.2	19 36.83	2 45.690			
	Weisse 0,928 . .	30.7	38.9	47.1	21 38.90	4 36.343	1 31.10	16.251	
	Eurynome . . .	1.6	10.0	18.4	23 10.00	2 45.954			
	Weisse 0,928 . .	27.5	35.9	44.1	24 35.83	4 36.287	+1 31.50	— 16.224	In this comparison + on the scale is — in
	Eurynome . . .	59.0	7.3	15.7	26 7.33	2 45.925			tion.

COMET, 1863, IV.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	COMET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
v. 7	Comet	0.9	17.6	33.5	5 18 17.33	3 32.655			m. s.
	Radcliffe 2771 . .	51.5	7.3	23.9	26 7.57	4 47.456	—7 50.24	+ 27.878	Corr. Chron. + 3 47.21 α δ
H.	Comet	41.0	59.0	14.0	27 58.00	3 32.783			h. m. s. ° ′ ″
	Radcliffe 2771 . .	30.1	46.4	2.9	35 46.47	4 48.051	7 48.47	28.345	Radcliffe 2771, 11 50 13.61 +41 6 4.99
	Comet	5.6	22.3	38.3	38 22.07	3 32.367			Comet—Radcliffe 2771,
	Radcliffe 2771 . .	51.1	7.6	. .	46 7.57	4 48.934	7 45.50	29.644	Δ α Δ δ h. m. s. m. s. ′ ″
	Comet	5.2	21.5	38.3	48 21.67	3 32.387			Sid. T. 5 46 57.23 — 7 44.30 + 4 35.96
	Radcliffe 2771 . .	48.4	4.8	20.8	56 4.67	4 49.380	7 43.00	30.070	Δ ρ .00 + .28
	Comet	47.1	3.8	19.4	5 58 3.43	3 31.868			p + .03 — 2.63
	Radcliffe 2771 . .	27.4	43.5	0.4	6 5 43.77	4 49.867	7 40.34	31.076	
	Comet	41.3	57.1	14.5	7 57.63	3 31.760			
	Radcliffe 2771 . .	19.3	36.3	52.1	15 35.90	4 50.201	—7 38.27	+ 31.518	

MELPOMENE.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Nov. 10	Weisse III, 228	13.1	21.6	. .	23 41 21.53	2 41.783	+3 17.97	— 14.362	m. s.
	Weisse III, 240	56.2	4.6	12.9	42 4.57	4 37.028	+2 34.93	+ 6.745	Corr. Chron. + 3 49.00
H.	Melpomene	31.2	39.4	47.9	44 39.50	3 43.360			α δ
									h. m. s. ° ′ ″
	Weisse III, 228	3.8	12.0	20.5	49 12.10	2 42.196	3 17.80	14.176	Weisse III, 228, 3 13 18.06 — 3 30 43.21
	Weisse III, 240	47.0	55.2	3.6	49 55.27	4 37.279	2 34.63	6.769	Weisse III, 240, 3 14 1.06 — 3 36 6.23
	Melpomene	. .	29.9	38.2	52 29.90	3 43.587			
									Melpomene—Weisse III, 228,
	Weisse III, 228	21.3	29.8	38.0	56 29.70	2 42.470	3 17.60	14.380	Δ α Δ δ
	Weisse III, 240	4.4	12.8	21.0	57 12.73	4 37 689	2 34.57	6.701	h. m. s.
	Melpomene	39.0	47.3	55.6	23 59 47.30	3 44.065			Sid. T. 0 20 8.04 + 3 16.93 — 3 44.18
									Δ ρ .00 — .14
	Weisse III, 228	5.9	14.1	22.3	0 1 14.10	2 42.570	3 17.33	14.475	p — .35 + 6.39
	Weisse III, 240	48.7	56.8	5.6	1 57.03	4 37.778	2 34.40	6.595	Melpomene—Weisse III, 240,
	Melpomene	23.2	31.4	39.7	4 31.43	3 44.260			h. m. s.
									Sid. T. 0 20 8.04 + 2 33.81 + 1 38.86
	Weisse III, 228	39.4	47.6	56.1	5 47.70	2 42.750	3 17.30	14.634	Δ ρ .00 + .03
	Weisse III, 240	22.7	30.9	39.2	6 30.93	4 37.967	2 34.07	6.445	p — .35 + 6.39
	Melpomene	56.7	5.0	13.3	9 5.00	3 44.599			
	Weisse III, 228	47.2	55.6	4.0	10 55.60	2 42.906	3 17.03	14.700	
	Weisse III, 240	30.6	38.7	47.0	11 38.77	4 38.266	2 33.86	6.522	
	Melpomene	4.3	12.8	20.8	14 12.63	3 44.821			
	Weisse III, 228	9.6	18.0	26.3	16 17.97	2 43.256	3 16.76	14.612	
	Weisse III, 240	52.9	1.0	9.3	17 1.07	4 38.375	2 33.66	6.369	
	Melpomene	26.3	34.8	43.1	19 34.73	3 45.083			
	Weisse III, 228	7.0	15.3	23.7	21 15.33	2 43.254	3 16.60	14.794	
	Weisse III, 240	50.2	58.4	7.0	21 58.53	4 38.450	2 33.40	6.264	
	Melpomene	23.6	32.0	40.2	24 31.93	3 45.263			
	Weisse III, 228	41.0	49.5	57.8	25 49.43	2 43.429	3 16.47	14.710	
	Weisse III, 240	24.2	32.7	41.0	26 32.63	4 38.644	2 33.27	6.367	
	Melpomene	57.6	5.9	14.2	29 5.90	3 45.354			
	Weisse III, 228	7.5	15.9	24.2	31 15.87	2 43.569	3 16.26	14.881	
	Weisse III, 240	50.7	58.9	7.1	31 58.90	4 38.802	2 33.23	6.214	
	Melpomene	23.9	32.0	40.5	34 32.13	3 45.665			
	Weisse III, 228	43.6	51.8	0.1	35 51.83	2 43.710	3 16.00	14.755	
	Weisse III, 240	26.5	34.8	43.1	36 34.80	4 38.868	2 33.03	6.265	
	Melpomene	59.6	7.8	16.1	39 7.83	3 45.680			
									m. s.
	Weisse III, 228	46.0	54.3	2.4	40 54.23	2 43.872	+3 16.00	— 14.929	Corr. Chron. + 3 49.18
	Weisse III, 240	29.1	37.4	46.0	41 37.50	4 39.034	+2 32.73	+ 6.095	α δ
	Melpomene	2.0	10.1	18.6	44 10.23	3 46.016			h. m. s. ° ′ ″
									Weisse III, 240, 3 14 1.08 — 3 36 6.45
Nov. 12	Weisse III, 240	57.2	5.8	14.0	0 26 5.67	2 41.367	+0 47.96	— 21.939	
H.	Melpomene	45.3	53.6	2.0	27 53.63	4 37.444			
	Weisse III, 240	4.5	12.9	21.1	29 12.83	2 41.430	0 47.87	22.005	
	Melpomene	52.3	0.8	9.0	30 0.70	4 37.573			
	Weisse III, 240	5.0	13.2	21.6	31 13.27	2 41.469	0 47.80	22.039	Melpomene—Weisse III, 240,
	Melpomene	52.8	1.1	9.3	32 1.07	4 37.646			Δ α Δ δ
									h. m. s. m. s. ′ ″
	Weisse III, 240	9.7	18.0	26.3	33 18.00	2 41.538	0 47.80	22.058	Sid. T. 0 44 13.94 + 0 47.56 — 5 38.80
	Melpomene	57.5	5.8	14.1	34 5.80	4 37.734			Δ ρ — .01 — .21
									p — .31 + 6.47
	Weisse III, 240	12.8	21.0	29.2	36 21.00	2 41.616	0 47.63	22.026	
	Melpomene	0.4	8.6	16.9	37 8.63	4 37.780			
	Weisse III, 240	18.3	26.7	35.0	38 26.67	2 41.618	0 47.73	22.130	
	Melpomene	6.2	14.3	22.7	39 14.40	4 37.886			
	Weisse III, 240	43.4	51.8	0.2	40 51.80	2 41.764	0 47.47	22.058	
	Melpomene	31.0	39.2	47.6	41 39.27	4 37.960			
	Weisse III, 240	59.1	7.4	15.7	43 7.40	2 41.787	+0 47.53	— 22.121	
	Melpomene	46.7	55.0	3.1	43 54.93	4 38.046			(Continued.)

MELPOMENE.

TE	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ *a*	Δ mic.	
33.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
. 12	Weisse III, 240 .	40. 1	48. 2	56. 7	0 45 48. 33	2 41. 863	+0 47. 37	— 22. 168	
	Melpomene . . .	27. 4	35. 7	44. 0	46 35. 70	4 38. 169			
[.									
	Weisse III, 240 .	47. 7	56. 0	4. 3	47 56. 00	2 41. 900	0 47. 27	22. 163	
	Melpomene . . .	35. 0	43. 2	51. 6	48 43. 27	4 38. 201			
	Weisse III, 240 .	50. 0	58. 4	6. 8	49 58. 40	2 41. 935	0 47. 20	22. 207	
	Melpomene . . .	37. 3	45. 6	53. 9	50 45. 60	4 38. 280			
	Weisse III, 240 .	58. 7	7. 0	15. 2	52 6. 97	2 42. 034	+0 47. 10	— 22. 172	
	Melpomene . . .	45. 8	54. 1	2. 3	52 54. 07	4 38. 344			

LÆTITIA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ a	Δ mis.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Nov. 10	Lætitia	37.6	46.0	54.1	1 5 45.90	3 41.495			
	Santini 222 . . .	3.7	11.9	20.1	9 11.90	3 36.821	—3 26.00	— 4.674	Corr. Chron. +
									a
H.	Lætitia	44.7	53.0	1.2	10 52.97	3 41.757			h. m. s. °
	Santini 222 . . .	10.9	19.0	27.3	14 19.07	3 36.963	3 26.10	4.794	Santini 222, 3 31 52.35 + 2
	Lætitia	25.4	33.9	42.1	15 33.80	3 41.804			Lætitia—Santini 222,
	Santini 222 . . .	51.8	59.8	8.2	18 59.93	3 36.998	3 26.13	4.806	Δ a
									h. m. s. m. s.
	Lætitia	45.2	53.5	1.9	20 53.53	3 42.110			Sid. T. 1 37 22.29 — 3 26.86 –
	Santini 222 . . .	. .	19.9	28.2	24 19.90	3 37.087	3 26.37	5.023	Δ ρ .00 –
									p — .14 –
	Lætitia	22.5	30.7	39.0	25 30.73	3 42.139			
	Santini 222 . . .	49.0	57.0	5.6	28 57.20	3 37.248	3 26.47	4.891	
	Lætitia	18.9	27.1	35.4	30 27.13	3 42.196			
	Santini 222 . . .	. .	53.9	2.1	33 53.83	3 37.270	3 26.70	4.926	
	Lætitia	13.2	21.4	30.0	35 21.53	3 42.360			
	Santini 222 . . .	40.4	48.6	56.8	38 48.60	3 37.297	3 27.07	5.063	
	Lætitia	48.1	56.3	4.8	40 56.40	3 42.628			
	Santini 222 . . .	15.2	23.3	31.8	44 23.43	3 37.398	3 27.03	5.230	
	Lætitia	30.0	38.2	46.4	46 38.20	3 42.831			
	Santini 222 . . .	57.2	5.6	14.0	50 5.60	3 37.673	3 27.40	5.158	
	Lætitia	11.3	19.6	28.0	51 19.63	3 42.980			
	Santini 222 . . .	39.0	47.0	55.4	54 47.13	3 37.590	3 27.50	5.390	
	Lætitia	34.8	43.0	51.2	1 56 43.00	3 43.114			
	Santini 222 . . .	. .	10.9	19.0	2 0 10.80	3 37.669	3 27.80	5.445	
	Lætitia	27.9	36.1	44.4	2 36.13	3 43.334			
	Santini 222 . . .	55.8	3.8	12.1	6 3.90	3 37.946	—3 27.77	— 5.388	
Nov. 12	Weisse III, 422 . .	40.2	48.8	57.0	1 11 48.67	2 40.518	+2 20.23	— 11.540	
	Weisse III, 454 .	13.4	22.1	. .	13 21.97	4 34.340	0 46.93	+ 8.144	Corr. Chron. +
H.	Lætitia	0.6	9.0	17.1	14 8.90	3 39.273			a
									h. m. s. °
	Weisse III, 422 .	37.2	45.4	53.8	15 45.47	2 40.548	2 19.90	— 11.619	Weisse 0, 422, 3 24 23.62 + 2
	Weisse III, 454	10.7	18.8	27.2	17 18.90	4 31.372	0 46.47	+ 8.076	Weisse 0, 454, 3 25 56.81 + 2
	Lætitia	57.1	5.3	13.7	18 5.37	3 39.382			
									Lætitia—Weisse 0, 422,
	Weisse III, 422	50.7	59.0	7.4	19 59.03	2 40.677	2 19.90	— 11.659	Δ a
	Weisse III, 454 .	24.0	32.4	40.9	21 32.43	4 34.547	0 46.50	+ 8.073	h. m. s. m. s.
	Lætitia	10.8	18.9	27.1	22 18.93	3 39.551			Sid. T. 1 40 42.21 + 2 19.33 –
									Δ ρ .00 –
	Weisse III, 422 .	30.1	38.2	46.7	24 38.33	2 45.522	2 19.77	— 11.789	p — .11 +
	Weisse III, 454 .	3.5	11.8	20.0	26 11.77	4 39.321	0 46.33	+ 7.872	Lætitia—Weisse 454,
	Lætitia	49.9	58.0	6.4	26 58.10	3 44.526			h. m. s.
									Sid. T. 1 40 42.21 + 0 45.92 +
	Weisse III, 422 .	17.8	26.1	34.4	28 26.10	2 45.712	2 19.60	— 11.555	Δ ρ .00
	Weisse III, 454 .	51.2	59.4	7.9	29 59.50	4 39.560	0 46.20	+ 8.155	p — .11 +
	Lætitia	37.4	45.7	54.0	30 45.70	3 44.482			
	Weisse III, 422	23.9	32.1	40.5	32 32.17	2 45.869	2 19.40	— 11.780	
	Weisse III, 454 .	57.2	5.6	14.0	34 5.60	4 39.690	0 45.97	+ 7.903	
	Lætitia	43.3	51.5	59.9	34 51.57	3 44.864			
	Weisse III, 422 .	10.8	19.0	27.3	36 19.03	2 46.068	2 19.27	— 11.865	
	Weisse III, 454 .	44.2	52.5	0.9	37 52.53	4 39.819	0 45.77	+ 7.748	
	Lætitia	30.0	38.3	46.6	38 38.30	3 45.148			
	Weisse III, 422 .	38.5	46.8	55.1	40 46.80	2 46.135	2 19.03	— 11.871	
	Weisse III, 454 .	11.9	20.1	28.3	42 20.10	4 39.943	0 45.73	+ 7.799	
	Lætitia	57.6	5.8	14.1	43 5.83	3 45.221			
	Weisse III, 422 .	48.0	56.2	4.5	44 56.23	2 46.235	2 18.80	— 11.935	
	Weisse III, 454 .	21.2	29.6	38.0	46 29.60	4 40.071	+0 45.43	+ 7.763	
	Lætitia	6.8	15.0	23.3	47 15.03	3 45.385			

LÆTITIA.

TE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
63.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
v. 12	Weisse III, 422 .	41.4	49.6	58.0	1 48 49.67	2 46.335	+2 18.76	− 11.932	
	Weisse III, 454 .	14.8	23.0	31.2	50 23.00	4 40.156	+0 45.43	+ 7.751	
I.	Lætitia	0.1	8.4	16.8	51 8.43	3 45.482			
	Weisse III, 422 .	18.0	26.3	34.7	53 26.33	2 46.433	2 18.64	12.042	
	Weisse III, 454 .	51.5	59.8	8.1	54 59.80	4 40.295	0 45.17	7.682	
	Lætitia	36.7	45.0	53.2	55 44.97	3 45.690			
	Weisse III, 422 .	8.4	16.5	25.0	57 16.63	2 46.502	+2 18.60	− 12.130	
	Weisse III, 454 .	41.9	50.1	58.3	58 50.10	4 40.343	+0 45.10	+ 7.573	
	Lætitia	27.0	35.1	43.5	59 35.20	3 45.847			

PALES.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Dec. 3	Weisse IV, 620 . .	22.5	31.7	41.0	2 6 31.73	1 38.832	+1 50.44	— 35.655	m. s.
	Pales	13.0	22.1	31.4	8 22.17	3 44.571			Corr. Chron. + 3 58.85
H.	Weisse IV, 620 . .	2.5	11.7	20.9	10 11.70	1 38.923	1 50.40	35.443	α δ h. m. s. ° ′ ″
	Pales	53.0	2.0	11.3	11 2.10	3 44.450			Weisse IV, 620, 4 29 7.78 +25 26 50.88
	Weisse IV, 620 . .	20.6	29.6	39.0	13 29.73	1 38.887	1 50.37	35.701	Pales—Weisse IV, 620,
	Pales	10.9	20.1	29.3	15 20.10	3 44.672			Δ α Δ δ h. m. s. m. s. ′ ″
	Weisse IV, 620 . .	9.7	18.9	28.1	17 18.90	1 38.977	1 50.17	35.689	Sid. T. 2 24 43.93 + 1 50.12 — 9 7.29
	Pales	0.0	9.0	18.2	19 9.07	3 44.750			Δ ρ .00 — .17 p — .17 + 1.64
	Weisse IV, 620 . .	18.8	27.9	37.0	20 27.90	1 39.027	1 50.13	35.757	
	Pales	8.9	18.0	27.2	22 18.03	3 44.868			
	Weisse IV, 620 . .	27.1	36.2	45.8	24 36.37	1 39.190	1 49.96	35.625	
	Pales	17.2	26.3	35.5	26 26.33	3 44.899			
	Weisse IV, 620 . .	4.2	13.4	22.8	28 13.47	1 39.226	1 49.86	35.753	
	Pales	54.1	3.3	12.6	30 3.33	3 45.063			
	Weisse IV, 620 . .	20.7	29.9	39.0	31 29.87	1 39.173	+1 49.63	— 35.852	
	Pales	10.4	19.4	28.7	33 19.50	3 45.109			
Dec. 10	Weisse IV, 512 . .	40.8	50.1	58.9	2 7 49.93	3 38.913	+0 36.94	+ 2.649	
	Pales	17.9	26.7	36.0	8 26.87	3 36.264			m. s. Corr. Chron. + 4 5.63
H.	Weisse IV, 512 . .	4.0	13.0	22.2	10 13.07	3 38.964	0 36.80	2.692	α δ h. m. s. ° ′ ″
	Pales	40.7	49.9	59.0	10 49.87	3 36.272			Weisse IV, 512, 4 34 8.13 + 24 53 27.76
	Weisse IV, 512 . .	25.9	35.0	44.2	12 35.03	3 39.015	0 36.70	2.676	
	Pales	2.6	11.7	20.9	13 11.73	3 36.339			Pales—Weisse IV, 512,
	Weisse IV, 512 . .	29.9	39.0	48.1	14 39.00	3 39.077	0 36.67	2.646	Δ α Δ δ h. m. s. m. s. ′ ″
	Pales	6.6	15.7	24.7	15 15.67	3 36.431			Sid. T. 2 28 9.23 + 0 36.38 + 0 39.31
	Weisse IV, 512 . .	43.9	52.9	2.0	16 52.93	3 39.068	0 36.47	2.629	Δ ρ .00 + .06 p — .16 + 1.62
	Pales	20.4	29.4	38.4	17 29.40	3 36.439			
	Weisse IV, 512 . .	50.3	59.3	8.7	18 59.43	3 39.094	0 36.74	2.640	
	Pales	27.0	36.2	45.3	19 36.17	3 36.454			
	Weisse IV, 512 . .	54.1	3.2	12.3	21 3.20	3 39.100	0 36.50	2.498	
	Pales	30.6	39.7	48.8	21 39.70	3 36.602			
	Weisse IV, 512 . .	12.2	21.3	30.7	23 21.40	3 39.171	0 36.43	2.613	
	Pales	48.7	57.8	7.0	23 57.83	3 36.558			
	Weisse IV, 512 . .	34.0	43.0	52.4	25 43.13	3 39.243	0 36.24	2.531	
	Pales	10.2	19.4	28.5	26 19.37	3 36.712			
	Weisse IV, 512 . .	42.0	51.0	0.0	27 51.00	3 39.284	0 36.13	2.547	
	Pales	18.0	27.1	36.3	28 27.13	3 36.737			
	Weisse IV, 512 . .	48.1	57.0	6.0	29 57.03	3 39.308	0 36.20	2.568	
	Pales	24.5	33.2	42.0	30 33.23	3 36.740			
	Weisse IV, 512 . .	15.4	24.7	34.0	32 24.70	3 39.280	0 36.17	2.401	
	Pales	51.6	0.9	10.0	33 0.87	3 36.879			
	Weisse IV, 512 . .	18.2	27.2	36.4	34 27.27	3 39.357	0 35.96	2.582	
	Pales	54.2	3.2	12.3	35 3.23	3 36.775			
	Weisse IV, 512 . .	27.3	36.3	45.3	36 36.30	3 39.420	0 35.97	2.351	
	Pales	3.2	12.3	21.3	37 12.27	3 37.069			
	Weisse IV, 512 . .	6.0	15.0	24.2	39 15.07	3 39.393	+0 35.70	+2.416	
	Pales	41.7	50.7	59.9	39 50.77	3 36.977			

PANDORA.

DATE.	OBJECT.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ α	Δ mic.	
1863.		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
Dec. 4	B. Z. 400,46 . .	5.9	15.7	25.3	0 8 15.63	3 32.872	+1 23.10	— 34.225	m. s.
	B. Z. 400,47 . .	8.9	18.6	28.3	8 18.60	3 30.233			Corr. Chron. + 3 59.67
F.	Pandora . . .	29.3	38.6	48.3	9 38.73	5 37.012			α δ h. m. s. ° ′ ″
	B. Z. 400,46 . .	38.3	48.0	57.7	15 48.00	3 33.265	1 22.77	34.108	B. Z. 400,46, 4 7 20.91 +31 20 59.32
	B. Z. 400,47 . .	41.4	50.8	0.7	15 50.97	3 30.420			
	Pandora . . .	1.3	10.7	20.3	17 10.77	5 37.288			Pandora—B. Z. 400,46, Δ α Δ δ
	B. Z. 400,46 . .	3.9	13.3	23.2	19 13.47	3 33.315	1 22.70	34.238	h. m. s. m. s. ′ ″
	Pandora . . .	26.6	36.2	45.7	20 36.17	5 37.468			Sid. T. 1 21 54.86 + 1 20.03 — 8 46.79 Δ ρ .00 — .16
	B. Z. 400,46 . .	19.1	28.8	38.4	39 28.77	3 33.912	1 21.43	34.080	*p* — .24 + 1.38
	Pandora . . .	40.8	50.2	59.6	40 50.20	5 37.907			
	B. Z. 400,46 . .	46.2	55.9	5.4	0 42 55.83	3 33.950	1 21.75	34.123	
	Pandora . . .	. .	17.6	27.2	44 17.58	5 37.988			
	B. Z. 400,46 . .	9.2	19.2	28.7	1 34 19.03	2 42.892	1 19.15	34.490	
	Pandora . . .	. .	38.4	47.8	35 38.18	4 51.520			
	B. Z. 400,46 .	41.1	50.8	0.4	37 50.77	2 42.970	1 19.30	34.654	
	Pandora . . .	. .	10.0	19.8	39 10.07	4 51.762			
	B. Z. 400,46 . .	0.4	9.9	. .	42 9.95	2 43.069	1 18.95	34.458	
	Pandora . . .	19.4	28.8	38.5	43 28.90	4 51.665			
	B. Z. 400,46 . .	25.6	35.2	44.9	1 59 35.23	2 43.472	1 18.20	34.495	
	Pandora . . .	. .	53.3	3.2	2 0 53.43	4 52.105			
	B. Z. 400,46 . .	41.5	51.3	0.9	2 2 51.23	2 43.412	1 17.84	34.550	
	Pandora . . .	59.5	9.0	18.7	4 9.07	4 52.100			
	B. Z. 400,46 . .	33.6	43.5	53.2	5 43.43	2 43.528	1 17.80	34.259	
	Pandora . . .	51.7	1.3	10.7	7 1.23	4 51.925			
	B. Z. 400,46 .	40.7	50.5	0.3	10 50.50	2 43.611	+1 17.43	— 34.486	
	Pandora . . .	58.3	7.9	17.6	12 7.93	4 52.255			
Dec. 7	Pandora . . .	40.4	49.9	59.5	2 11 49.93	5 31.578			m. s.
	B. Z. 400,46 . .	27.2	36.6	46.5	13 36.77	1 35.121	—1 46.84	— 56.458	Corr. Chron. + 4 2.37
F.	Pandora . . .	19.2	28.6	38.3	15 28.70	5 31.725			α δ h. m. s. ° ′ ″
	B. Z. 400,46 . .	6.4	15.9	25.6	17 15.97	1 35.161	1 47.27	56.565	B. Z. 400,36, 4 7 20.93 +31 20 59.51
	Pandora . . .	37.2	46.5	56.5	19 46.73	5 32.048			Pandora—B. Z. 400,36,
	B. Z. 400,46 . .	24.4	34.1	43.6	21 34.03	1 35.489	1 47.30	56.560	Δ α Δ δ h. m. s. m. s. ′ ″
	Pandora . . .	36.9	46.7	56.6	27 46.73	5 31.880			Sid. T. 2 22 45.40 — 1 47.10 —14 27.08
	B. Z. 400,46 . .	. .	33.4	43.9	29 33.73	1 35.325	—1 47.00	— 56.556	Δ ρ .00 — .25 *p* — .15 + 0.96
Dec. 9	(9.2)	24.2	33.9	43.7	1 2 33.93	2 38.421			m. s.
	B. Z. 400,37 . .	35.2	44.8	54.6	2 44.86	1 39.537	+2 33.07	— 57.959	Corr. Chron. 4 4.55
F.	(* 8)	38.3	47.3	57.6	4 47.40	2 43.929			α δ
	Pandora . . .	8.1	17.9	27.8	5 17.93	5 37.495			h. m. s. ° ′ ″
	(9.2)	59.2	8.3	18.2	13 8.57	2 38.572			B. Z. 400,37, 4 1 4.99 +31 17 6.65
	B. Z. 400,37 . .	10.0	19.5	29.2	13 19.57	1 39.499	2 32.63	57.975	Pandora—B. Z. 400,37,
	Pandora . . .	42.5	52.3	1.8	15 52.20	5 37.471			Δ α Δ δ h. m. s. m. s. ′ ″
	B. Z. 400,37 . .	22.6	32.3	41.7	22 32.20	1 39.851	2 32.27	57.940	Sid. T. 1 43 43.33 + 2 31.63 —14 50.93
	Pandora . . .	54.9	4.5	14.0	25 4.47	5 37.790			Δ ρ .00 — .26 *p* — .19 + 1.14
	B. Z. 400,37 . .	55.3	5.0	14.8	28 5.03	1 39.830	2 32.10	57.950	
	Pandora . .	27.6	37.2	46.6	30 37.13	5 37.829			
	B. Z. 400,37 . .	7.7	17.6	27.2	32 17.50	1 40.091	2 31.73	57.970	
	Pandora . . .	39.4	49.2	59.1	34 49.23	5 38.060			
	B. Z. 400,37 . .	51.1	0.7	10.3	38 0.70	1 40.176	+2 31.63	— 58.096	
	Pandora . . .	22.7	32.2	42.1	39 32.33	5 38.271			

(Continued.)

PANDORA.

DATE.	OBJECTS.	OBSERVED TIMES OF TRANSIT.				MIC.	PLANET—STAR.		RESULTS.
		A.	B.	C.	Mean.		Δ *a*	Δ mic.	
		s.	s.	s.	h. m. s.	revs.	m. s.	revs.	
1863. Dec. 9	B. Z. 400, 37 . .	18.8	28.3	38.3	1 41 28.47	1 40.282	+2 31.53	— 58.114	
	Pandora . . .	50.5	59.9	9.6	44 0.00	5 38.395			
	B. Z. 400, 37 . .	30.9	40.5	50.3	45 40.57	1 40.345	2 31.40	58.017	
	Pandora . . .	2.5	12.0	21.4	48 11.97	5 38.361			
	B. Z. 400, 37 . .	30.2	39.6	49.5	49 39.77	1 40.419	2 31.10	58.171	
	Pandora . . .	. .	. .	20.6	52 10.87	5 38.589			
	B. Z. 400, 37 . .	18.1	27.7	37.3	53 27.70	1 40.482	2 30.83	58.299	
	Pandora . . .	48.7	58.6	8.3	55 58.53	5 38.780			
	B. Z. 400, 37 .	24.5	33.8	43.6	57 33.97	1 40.500	2 30.70	58.281	
	Pandora . . .	55.1	4.7	14.2	2 0 4.67	5 38.780			
	B. Z. 400, 37 . .	25.6	35.3	45.4	1 35.43	1 40.643	+2 30.57	— 58.308	
	Pandora . . .	56.6	6.0	15.4	4 6.00	5 38.950			

DOUBLE STARS MEASURED IN 1863.

Description.				Date.	Δ	No. ms.	P.	No. ms.	Power.	A.	Obs'r.
8. Monocerotis,	h. m. s. α 6 16 21	Mag. 6.0	Blue.	Feb. 20	″ 13.70	9	° 25.9	9	280	8	F.
	δ+ 4° 39′ 41″	9.2	Gray.	Mar. 16	14.11	10	26.0	12	. .	. .	F.
108. P. VIII,	h. m. s. α 8 28 25			Mar. 5	10.39	5	25.8	10	280	7	H.
	δ+ 7° 6′ 28″			14	10.50	5	25.8	6	280	7	H.
5. Navis,	h. m. s. α 7 41 24	Mag. 7.0	Light yellow.	Mar. 14	3.81	7	15.8	8	280	7	H.
	δ− 11° 51′ 15″	8.5	Light yellow.								
11. Monocerotis,	h. m. s. α 6 22 2	Mag.	A. B.	Mar. 17	7.47	5	130.4	4	280	7	H.
	δ− 6° 56′ 46″										
			A. C.	17	9.81	1	123.2	4	280	7	H.
			B. C.	17	. .	. .	107.0	4	280	7	H.
160. P. VIII,	h. m. s. α 8 38 16	Mag. 9.0	White.	Mar. 18	5.43	6	262.1	6	300	9	F.
	δ− 2° 5′ 40″	9.2	White.	31	4.88	5	260.2	6	280	7	H.
Σ. 1466,	h. m. s. α 10 36 5	Mag. 6.5	White.	Mar. 28	6.40	6	240.6	6	280	7	H.
	δ+ 5° 28′ 54″	7.5	Blue.	April 21	6.94	5	239.1	6	280	6	H.
				13	6.92	10	239.9	10	280	8	F.
2. Navis,	h. m. s. α 7 39 3	Mag. 7.0	Light yellow.	Mar. 31	16.69	5	338.7	6	280	6	H.
	δ− 14° 21′ 9″	8.0									
17. Hydræ,	h. m. s. α 8 48 38	Mag. 7.5	White.	April 1	4.42	10	356.2	10	300	. .	F.
	δ− 7° 26′ 16″	8.5	White.								
ζ. Cancri,	h. m. s. α 8 4 11			April 1	4.59	5	137.4	5	300	. .	F.
	δ+ 18° 4′ 6″										
υ^1. Cancri,	h. m. s. α 8 18 59	Mag. 7.0	Reddish white.	April 9	5.98	5	39.8	6	280	8	H.
	δ+ 24° 59′ 33″	8.0	Reddish white.								
θ^2. Cancri,	h. m. s. α 8 18 19	Mag. 6.0	Red.	April 9	4.97	5	214.4	6	280	7	H.
	δ+ 27° 23′ 23″	6.2									
ε. Hydræ,*	h. m. s. α 8 39 22			April 13	3.32	2	199.3	2	280	8	F.
	δ+ 6° 55′ 52″										
Σ. 1343,	h. m. s. α 9 12 38	Mag. 9.6	White.	April 13	6.79	2	269.4	6	280	8	F.
	δ+ 5° 35′ 28″	10.0	White.								

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* The measures are quite uncertain, and the distance certainly too large.

DOUBLE STARS MEASURED IN 1863.

Description.						Date.	Δ	No. ms.	P.	No. ms.	Power.	A.	Obs'r.
							″		°				
Σ. 1482,	α	h. m. s. 10 44 52	Mag.	8.5	Reddish white. . . .	April 18	11.34	5	304.9	6	280	7	H.
	δ +	8° 12′ 18″		9.5	Reddish white.								
54 Leonis,	α	h. m. s. 10 48 1	Mag.	6.0	Yellowish white. . .	April 18	6.34	5	102.3	5	280	7	H.
	δ +	25° 29′ 45″		7.5	White.								
Σ. 1540,	α	h. m. s. 11 19 42	Mag.	8.0	White.	April 21	30.12	5	150.0	6	280	6	H.
	δ +	3° 46′ 27″		9.0	White.								
Σ. 1604,	α	h. m. s. 12 2 14	Mag.	8.0	Yellowish white. . . .	April 25	11.38	4	94.6	6	280	7	H.
							48.52	4	94.6	6	280	7	H.
	δ —	11° 4′ 10″		10.0 11.5	Blue. Yellowish white.								
Σ. 1636,	α	h. m. s. 12 15 25	Mag.	7.0	Yellow.	April 25	19.97	4	335.4	6	280	7	H.
	δ +	6° 5′ 6″		10.0	White.								
Weisse XI, 403,	α	h. m. s. 11 23 43	Mag.	8.2	White.	May 1	8.42	3	331.3	3	280	. .	F.
	δ —	5° 56′ 48″		9.6	Reddish brown.								
51 Libræ,	α	h. m. s. 15 56 40	Mag.	6.0	Yellow.	July 2	7.02	5	70.6	6	280	. .	H
						July 18	7.36	5	68.9	6	280	8	H.
	δ —	10° 59′ 3″		9.0	Yellow.								
Σ. 1990,	α	h. m. s. 15 56 44	Mag.	8.7	Yellowish.	July 2	10.71	5	100.6	6	280	8	H.
	δ —	11° 3′ 38″		9.0	Yellowish.								
Σ. 1914,	α	h. m. s. 15 4 22	Mag.	8.0	. . . .	July 20	31.25	5	335.7	5	280	9	F.
	δ —	4° 57′ 2″		9.0									
36 Ophiuchi,	α	h. m. s. 17 6 45	Mag.	6.2	Yellow.	July 31	4.99	7	205.8	7	280	. .	F.
	δ —	26° 23′ 23″		6.6	Yellow.								
α Herculis,	α	h. m. s. 17 8 16	Mag.	3.0	Yellow.	Aug. 1	4.27	5	116.8	6	280	8	H.
	δ +	14° 33′ 9″		6.0	Yellow.								
70 Ophiuchi,	α	h. m. s. 17 58 23	Mag.	5.0	Yellow.	Aug. 3	5.19	5	106.2	5	280	. .	F.
	δ +	2° 32′ 21″		7.0	Yellow.	Aug. 11	5.74	5	106.9	6	280	8	H.
						Aug. 15	6.04	5	106.3	6	280	7	H.
						Aug. 20	5.87	5	105.9	6	400	7	H.
						Sept. 3	5.72	5	105.0	6	400	7	H.
						Sept. 5	5.74	5	104.8	6	400	8	H.

DOUBLE STARS MEASURED IN 1863.

Description.				Date.	Δ	No. ms.	P.	No. ms.	Power.	A.	Obs'r
β. Scorpi,	h. m. s. α 15 57 18 δ − 19° 25′ 8″	Mag.		Aug. 8	″ 13.92	5	° 24.4	6	280	7	H.
5. Serpentis,	h. m. s. α 15 12 9 δ + 2° 17′ 59″	Mag. 6.0 10.0	Yellow . . . . . . White.	Aug. 11	10.71	5	40.6	6	280	8	H.
ν. Serpentis,	h. m. s. α 17 12 57 δ − 12° 42′ 2″	Mag. 6.0 10.0	Yellow . . . . . . White.	Aug. 11	48.09	5	31.6	6	280	8	H.
Σ. 2149,	h. m. s. α 17 12 28 δ − 6° 16′ 44″	Mag. 9.5 10.0	White . . . . . . White.	Aug. 11	7.82	5	24.4	6	280	8	H.
Σ. 2204,	h. m. s. α 17 38 37 δ − 13° 14′ 55″	Mag. 8.5 8.5	White . . . . . . White.	Aug. 11	14.90	5	24.7	6	280	8	H.
Σ. 2234,	h. m. s. α 17 45 23 δ − 7° 56′ 0″	Mag. 9.5 11.0	. . . .	Aug. 15	17.26	5	198.9	6	280	8	H.
Σ. 2245,	h. m. s. α 17 50 16 δ + 18° 20′ 59″	Mag. 8.0 8.0	White . . . . . . White.	Aug. 15	3.05	5	295.6	6	400	7	H.
Σ 2244,	h. m. s. α 17 49 54 δ + 0° 5′ 20″	Mag. 7.0 7.0	Yellow . . . . . . Yellow.	Aug. 20	0.95	6	276.1	6	400	7	H.
73. Ophiuchi,	h. m. s. α 18 2 36 δ + 3° 58′ 20″	Mag. 6.0 8.6	Yellowish . . . . Yellowish.	Aug. 20	1.53	5	257.8	6	400	7	H.
Σ. 2287,	h. m. s. α 18 3 33 δ + 2° 35′ 0″	Mag. 10.0 10.0	White . . . . . . White.	Aug. 20	22.22	5	150.8	6	280	7	H.
Σ. 2288,	h. m. s. α 18 3 33 δ + 2° 31′ 0″	Mag. 9.5 12.0	Yellow . . . . . . White.	Aug. 20	16.18	5	63.0	6	280	7	H.
59. Serpentis,	h. m s. α 18 20 3 δ + 0° 6′ 56″	Mag. 5.0 10.0	Yellow . . . . . . White.	Aug. 20	4.09	5	312.7	6	400	7	H.
Σ. 2391,	h. m. s. α 18 41 10 δ − 6° 9′ 28″	Mag. 7.0 10.0	Yellow . . . . . . White.	Aug. 20	38.87	5	331.5	6	280	7	H.

DOUBLE STARS MEASURED IN 1863.

Description.				Date.	Δ	No. ms.	- P.	No. ms.	Power.	A.	Obs'r.
					″		°				
θ^{2}. Serpentis,	α $18^{h}\ 49^{m}\ 15^{s}$	Mag. 5.5	Yellow	Aug. 20	22.19	5	104.5	6	280	7	H.
	$\delta + 4^{\circ}\ 1'\ 25''$	5.5	Yellow	Sept. 3	21.76	5	102.9	6	400	7	H.
Σ. 2313,	α $18^{h}\ 17^{m}\ 12^{s}$	Mag. 6.5	White	Aug. 24	6.38	10	197.6	10	280	. .	F.
	$\delta - 6^{\circ}\ 40'\ 25''$	9.5	White.								
Σ. 2425,	α $18^{h}\ 52^{m}\ 58^{s}$	Mag. 7.0	White	Aug. 24	32.03	10	182.1	10	280	. .	F.
	$\delta - 8^{\circ}\ 22'\ 28''$	8.0	White.								
23. Aquilæ,	α $19^{h}\ 11^{m}\ 25^{s}$	Mag. 5.5	White.	Aug. 24	3.37	2	13.3	2	300	. .	F.
	$\delta + 0^{\circ}\ 50'\ 1''$	10.0	Blue.	Aug. 28	2.96	10	11.8	10	300	. .	F.
Σ. 2434,	α $18^{h}\ 55^{m}\ 32^{s}$	Mag. 8.0	White.	Aug. 24	24.73	6	133.4	6	280	. .	F.
	$\delta - 0^{\circ}\ 54'\ 17''$	8.4	White.								
Σ. 2447,	α $18^{h}\ 59^{m}\ 20^{s}$	Mag. 7.0	. . . .	Aug. 27	14.34	3	342.1	4	400	6	H.
	$\delta - 1^{\circ}\ 33'\ 27''$	9.0									
Σ. 2497,	α $19^{h}\ 13^{m}\ 8^{s}$	Mag. 8.0	White.	Aug. 28	29.63	10	356.5	10	280	. .	F.
	$\delta + 5^{\circ}\ 19'\ 53''$	8.2	Bluish-white.								
Σ. 2562,	α $19^{h}\ 36^{m}\ 0^{s}$	Mag. 7.5	White.	Aug. 28	26.53	8	252.2	8	280	. .	F.
	$\delta + 8^{\circ}\ 3'\ 6''$	9.2	Bluish.								
Σ. 2119,	α $16^{h}\ 58^{m}\ 35^{s}$	Mag. 8.2	White.	Aug. 31	2.19	10	12.3	10	120	.	F.
	$\delta - 13^{\circ}\ 44'\ 21''$	8.5	White.								
Σ. 2501,	α $19^{h}\ 14^{m}\ 38^{s}$	Mag. 7.0	Bluish-white.	Aug. 31	20.65	10	20.6	10	280	. .	F.
	$\delta - 4^{\circ}\ 59'\ 54''$	9.0	Bluish-white.								
Σ. 2545,	α $19^{h}\ 31^{m}\ 2^{s}$	Mag. 6.0	White.								
	$\delta - 10^{\circ}\ 28'\ 8''$	11.0	Blue-gray.	Sept. 2	4.41	10	321.4	10	280	8	F.
P. 185, XIX,	α $19^{h}\ 29^{m}\ 7^{s}$	Mag. 9.5	White.	Sept. 2	5.00	3	322.4	3	280	8	F.
	$\delta - 10^{\circ}\ 44'\ 18''$	10.0	White.								
Σ. 2566,	α $19^{h}\ 37^{m}\ 36^{s}$	Mag. 7.2	White.	Sept. 4	26.50	6	234.7	6	280	9	F.
	$\delta + 4^{\circ}\ 38'\ 46''$	11.2	White.								

DOUBLE STARS MEASURED IN 1863.

Description.				Date.	Δ	No. ms.	P.	No. ms.	Power.	A.	Obs'r.
Σ. 2594,	h. m. s. α 19 47 3	Mag. 6.0	White.	Sept. 4	″ 37.00	10	° 171.3	10	280	9	F.
	δ − 8° 35′ 20″	7.0	White.								
μ. Herculis,	h. m. s. α 17 41 10	Mag. 4.0	White.	Sept. 4	31.25	10	243.4	10	280	9	F.
	δ + 27° 48′ 37″	10.8	White.								
Σ. 2601,	h. m. s. α 19 49 45	Mag. 9.0	White.	Sept. 5	7.65	4	163.9	4	280	7	H.
	δ + 1° 33′ 2″	11.0	White.								
Σ. 2612,	h. m. s. α 19 54 32	Mag. 8.0	White.	Sept. 5	38.15	5	53.1	6	280	7	H.
	δ + 6° 32′ 50″	9.0	White.								
Σ. 2613,	h. m. s. α 19 54 47	Mag. 7.0	Yellow.	Sept. 5	4.30	5	347.5	6	400	7	H.
	δ + 10° 21′ 5″	8.0	Yellow.								
95 Herculis,	h. m. s. α 17 55 45	Mag. 6.3	White.	Sept. 7	6.72	11	258.9	11	280	7	H.
	δ + 21° 35′ 54″	6.3	White.								
Σ. 2615,	h. m. s. α 19 56 7	Mag. 9.0	White.	Sept. 7	11.84	8	321.6	6	200	7	F.
	δ + 8° 0′ 30″	11.2	Reddish.								
300. P. XVII,	h. m. s. α 17 50 24	Mag. 9.0	Bluish-white. . . .	Sept. 21	4.10	10	113.9	10	280	. .	F.
	δ + 18° 22′ 0″	9.0	Bluish-white.								

In the preceding tables Δ signifies the distance of the stars, P. the angle of position, and A. the state of the atmosphere; 10 being the most favorable condition.

OCCULTATION OF STARS BY THE MOON, 1863.

DATE.		OBJECTS.	PHASE.	CHRON. TIME.	CORR. CHRON.	MEAN TIME.	OBS'R.	REMARKS.
1863.				h. m. s.	m. s.	h. m. s.		
Feb. 23	δ	Arietis	Immersion . . .	8 2 2.4	+ 1 39.31	9 49 52.3	F.	
Mar. 22	40	Arietis	Immersion . . .	7 51 31.4	2 15.32	7 53 39.6	H.	
April 9	ξ^1	Sagittarii	Immersion . . .	17 5 3.0	2 12.90	15 54 51.8	H.	Uncertain.
9	ξ^1	Sagittarii	Emersion . . .	18 12 40.2	2 12.80	17 2 17.8	H.	
21		Anon., 9th mag. . .	Immersion . .	10 0 40.0	2 2.10	8 4 16.7	H.	
21	105	Tauri	Immersion . . .	10 4 46.7	2 2.10	8 8 22.7	H.	
25	29	Cancri	Immersion . . .	10 42 58.0	1 58.49	8 30 40.5	H.	
25		B. A. C. 2872 . . .	Immersion . . .	14 12 23.8	1 58.69	11 59 32.2	H.	
30	q	Virginis	Immersion . . .	15 16 53.7	+ 1 48.20	12 44 1.5	H.	
Aug. 24	29	Sagittarii	Immersion . . .	(m. t., 12 3 24.2)	− 7 44.84	11 55 39.4	F.	
27	c¹	Capricorni	Immersion . . .	18 56 33.0	+ 2 37.60	8 36 0.8	H.	
27		Anon., 8th mag. . .	Immersion . . .	18 59 48.0	2 37.60	10 20 3.2	H.	
30	51	Piscium	Immersion . . .	20 4 0.0	2 43.80	9 31 35.2	H.	Uncertain.
30	51	Piscium	Emersion . . .	21 4 8.3	2 43.70	10 31 33.6	H.	
Sept. 24	51	Aquarii	Immersion . . .	1 3 38.3	3 1.95	12 52 24.8	H.	
Oct. 18		B. A. C. 6535 . . .	Immersion . . .	21 19 54.2	3 38.38	7 35 32.0	H.	
29	l	Tauri	Emersion . . .	22 13 14.0	3 42.70	7 45 32.3	H.	Uncertain.
Nov. 3	ω	Leonis	Immersion . . .	5 12 20.3	3 46.63	14 23 54.4	H.	
19	9	Piscium	Immersion . . .	21 20 0.7	3 53.66	5 30 4.6	H.	
19	κ	Piscium	Immersion . . .	21 38 17.4	3 53.70	5 48 18.3	H.	
19	κ	Piscium	Emersion . . .	22 16 56.2	3 53.80	6 26 50.9	H.	Doubtful.
Dec. 15	51	Aquarii	Immersion . . .	1 19 17.6	+ 3 8.93	7 35 45.7	H.	

MEAN RIGHT ASCENSION FOR 1860.0

OF

STARS OBSERVED

WITH THE

TRANSIT INSTRUMENT,

1863.

MEAN RIGHT ASCENSIONS FOR 1860.0,

TRANSIT INSTRUMENT.

Lacaille 9732.

363.		h. m. s.	Mag.
.	17	0 0 37.32	6.7
r.	6	37.42	6.3

Lacaille 9735.

g.	28	0 0 56.06	5.8

α Andromedæ.

.	12	0 1 9.39	
	31	9.44	
.	2	9.40	
	7	9.46	
	10	9.45	
rch	2	9.42	
	11	(9.58)	
il	9	9.45	
r	1	9.43	
	4	9.46	
e	8	9.36	
	9	9.48	
t.	26	(9.16)	
.	31	9.36	
.	10	9.42	

Weisse XXIII, 1250.

.	4	0 1 11.33	8.2
.	7	11.44	8.5

B. A. C. 10.

.	6	0 2 12.50	5.8

Weisse O, 10.

.	2	0 2 18.53	9.5
	4	18.62	9.0

Lacaille 9747.

.	8	0 2 51.01	8.2

O. Arg. S. 36.

	19	0 3 27.26	7.5

Weisse O, 44.

.	2	0 3 28.76	8.3

Weisse O, 51.

	26	0 3 54.89	7.5
.	4	54.82	7.5
.	7	54.80	8.0

Weisse O, 88.

1863.		h. m. s.	Mag.
Dec.	4	0 5 49.41	8.5
	8	49.61	9.0

Weisse O, 90.

Aug.	28	0 5 54.68	8.5
Oct.	26	54.60	9.0

γ Pegasi.

Jan.	12	0 6 1.79	
	23	1.79	
Aug.	2	1.84	
Oct.	17	1.73	
Nov.	4	1.75	
Dec.	2	1.74	

(* 9.0) — 17° 57′.

Nov.	6	0 6 4.51	

(* 7.7) — 17° 58′.

Oct.	19	0 6 5.77	7.4
Nov.	6	5.95	7.8

(* 8.3) — 18° 57′.

Oct.	13	0 6 6.02	

Harvard Z. 97.

Dec.	4	0 6 50.93	9.0
	7	50.94	9.0

B. A. C. 42.

Aug.	28	0 8 46.20	7.6
Oct.	26	46.21	7.6
Nov.	4	46.19	7.2

B. A. C. 43.

Oct.	19	0 9 3.55	5.2
Nov.	13	3.63	6.0

Lacaille 26.

Nov.	6	0 9 28.65	7.0

B. A. C. 49.

1863.		h. m. s.	Mag.
Nov.	6	0 9 39.00	6.7

Lacaille 37.

Aug.	28	0 11 37.80	7.5

O. Arg. S. 117.

Nov.	18	0 12 22.54	8.0
Dec.	7	22.58	7.0

Lalande 344.

Oct.	19	0 12 53.92	7.3
	31	54.01	
Dec.	2	53.83	7.5

O. Arg. S. 122.

Nov.	13	0 12 56.76	6.5
	18	56.69	7.0

d Piscium.

Aug.	2	0 13 23.69	
Sept.	26	23.59	

Lacaille 49.

Aug.	28	0 13 53.12	7.2
Nov.	6	52.95	7.3

O. Arg. S. 136.

Oct.	19	0 14 40.95	5.2
Nov.	2	40.96	

B. A. C. 77.

Aug.	28	0 16 11.80	5.8
Dec.	2	11.79	7.0

Lacaille 66.

Oct.	31	0 16 20.91	7.9
Nov.	6	20.96	6.7

Lacaille 78.

Aug.	28	0 18 3.43	6.5
	30	3.44	7.0
Nov.	18	3.57	6.7

44 Piscium.

1863.		h. m. s.	Mag.
Dec.	7	0 18 13.61	

45 Piscium.

Aug.	2	0 18 28.96	
	3	29.06	6.2
Sept.	26	28.83	

Lacaille 83.

Nov.	13	0 18 44.57	6.5
Dec.	4	44.61	6.5
	9	44.62	6.0

Lacaille 84.

Nov.	4	0 18 56.77	6.7
	6	56.86	7.0

(* 8.0) + 0° 20′.

Oct.	9	0 19 1.55	

Lacaille 90.

Sept.	25	0 20 13.59	6.0

Lacaille 92.

Aug.	28	0 20 31.22	7.0
	30	31.28	7.0

O. Arg. S. 202.

Oct.	17	0 20 34.08	6.7
	19	34.12	6.6
	31	34.12	
Nov.	2	34.03	6.0

B. A. C. 103.

Nov.	6	0 20 58.77	5.0

Lacaille 98.

Nov.	4	0 21 27.28	6.5

Lacaille 100.

Nov.	13	0 21 49.98	6.5
	18	50.05	6.5

12 Ceti.

1863.		h. m.	s.	Mag.
Jan.	2	0 22	53.66	5.5
	12		53.65	5.5
Aug.	3		(53.81)	5.7
	28		53.68	
	30		53.69	6.0
Oct.	17		53.66	
	19		53.60	
	31		53.72	
Nov.	2		53.67	
	6		53.70	
	12		53.66	
Dec.	4		53.66	
	7		53.65	
	9		53.60	

B. A. C. 113.

Sept.	25	0 22	56.97	6.6

Weisse O, 375.

Dec.	14	0 23	17.69	8.2

Lacaille 118.

Sept.	25	0 25	21.64	6.7
Oct.	17		21.48	6.7
	19		21.56	7.0
Nov.	13		21.61	6.5

Lacaille 122.

Jan.	2	0 26	38.48	7.2
Nov.	18		38.37	6.8

Santini 30.

Dec.	7	0 26	42.71	7.5
	9		42.80	7.8

B. A. C. 135.

Nov.	12	0 26	45.28	6.5

B. A. C. 136.

Aug.	3	0 26	51.73	6.5
Oct.	31		51.70	

Weisse 453.

Nov.	4	0 27	5.38	9.3
Dec.	14		5.25	9.0

Lacaille 131.

Aug.	28	0 27	10.86	7.0
	30		11.01	7.3

13 Ceti.

Jan.	12	0 28	2.61	6.0
Sept.	26		2.50	

Lacaille 138.

Sept.	25	0 28	4.62	7.0
Nov.	13		4.62	6.7
	18		4.71	6.7

(* 127) W. + 2° 32′.

Dec.	7	0 28	25.83	8.6
	9		25.92	8.7

O. Arg. S. 284.

1863.		h. m.	s.	Mag.
Nov.	2	0 28	41.11	7.5

Lacaille 142.

Aug.	3	0 29	8.83	6.0
	28		8.66	5.5
Oct.	17		8.69	6.3
	19		8.73	6.5
	31		8.77	

(*) + 1° 15′.

Nov.	4	0 29	31.35	9.0

B. A. C. 160.

Jan.	2	0 30	9.41	5.3
Sept.	25		9.40	5.5
Nov.	13		9.36	5.7

Lacaille 157.

Aug.	28	0 31	51.60	6.0
Oct.	17		51.61	6.3
	19		51.65	6.5

B. A. C. 167.

Dec.	9	0 31	54.48	7.3
	14		54.44	7.0

α Cassiopeæ.

Jan.	12	0 32	34.92	
April	30		34.95	

(*) — 18° 22′.

Nov.	4	0 32	57.96	9.0

Weisse O, 556.

Dec.	7	0 33	5.76	9.0

(*) — 18° 19′.

Nov.	4	0 33	10.84	9.0

Lacaille 167.

Sept.	25	0 33	29.79	6.0
Nov.	13		29.73	6.6

Lacaille 181.

Aug.	28	0 35	50.60	6.2
Oct.	31		50.66	

Weisse O, 620.

Dec.	7	0 36	17.51	8.5

21 Cassiopeæ.

May	1 S. P.	0 36	28.29	4.7
	11 S. P.		28.22	

β Ceti.

Jan.	2	0 36	33.71	2.0
	12		33.65	
	17		33.65	
	23		33.69	
Mar.	2		33.73	
June	9		33.63	

β Ceti—Continued.

1863.		h. m.	s.	Mag.
Sept.	26	0 36	33.56	
	27		33.66	
Oct.	26		33.66	
Nov.	2		33.61	
	4		33.62	
	18		33.64	
Dec.	14		33.61	

O. Arg. S. 388.

Oct.	17	0 37	30.03	7.8
	19		29.93	7.5
Nov	6		30.06	7.7

B. A. C. 203.

Nov.	12	0 37	48.59	6.5
	13		48.60	6.5

Lacaille 194.

Aug.	3	0 37	55.95	6.6
	28		55.80	6.5
	30		55.83	6.7
Sept.	25		55.96	7.0

Weisse O, 658.

Dec.	7	0 38	25.53	9.0

Lacaille 203.

Sept.	27	0 39	14.27	6.5
Nov.	2		14.18	6.5

Lacaille 210.

Oct.	19	0 39	47.96	6.5
Nov.	6		47.99	6.7

60 Piscium.

Dec.	9	0 40	9.31	

Lacaille 217.

Aug.	3	0 40	53.14	6.1
	28		53.03	6.5
Sept.	25		53.13	6.5

Lacaille 218.

Oct.	31	0 41	5.25	6.5
Nov.	12		5.27	6.7
Dec.	14		5.20	

Lacaille 219.

Nov.	4	0 41	6.32	6.7

δ Piscium.

Jan.	12	0 41	25.25	
	17		25.37	
Aug.	30		25.18	

Lacaille 223.

Nov.	6	0 42	19.77	6.0

Lacaille 224.

Aug.	28	0 42	39.69	6.0
	30		39.78	5.5
Sept.	25		(39.89)	6.0
Oct.	9		39.61	7.0
	19		39.63	6.3

Weisse O, 733.

1863.		h. m.	s.	Mag.
Oct.	26	0 42	48.63	8.0
Dec.	7		48.50	8.0

Weisse O, 749.

Dec.	4	0 43	39.74	7.8
	9		39.69	8.0

Lacaille 234.

Oct.	31	0 44	43.13	8.8

Weisse O, 788.

Oct.	26	0 45	27.88	8.5
Dec.	3		27.94	8.6
	9		27.82	8.8

20 Ceti.

Jan.	12	0 45	51.21	
	17		51.25	

Lacaille 239.

Aug.	3	0 46	8.23	6.1
	28		8.12	6.2
	30		8.11	6.0

Lacaille 241.

Jan.	2	0 46	20.16	7.0
Sept.	25		20.16	6.0
Oct.	9		19.96	7.0
	19		20.07	6.8
Nov.	6		20.08	6.5

(*) + 1° 16′.

Dec.	4	0 46	48.25	8.8

O. Arg. S. 506.

Oct.	19	0 48	15.77	7.5
Dec.	14		15.73	7.0

Lacaille 252.

Jan.	2	0 48	31.69	6.5
Aug.	28		31.57	6.2
	30		31.58	6.0
Sept.	25		31.69	6.5

Lacaille 256.

Oct.	31	0 49	8.06	7.2
Nov.	6		7.96	6.3

Lacaille 257.

Sept.	27	0 49	59.36	6.8
Nov.	12		59.38	
Dec.	9		59.39	7.0

Weisse O, 871.

Jan.	12	0 50	30.04	8.0
Dec.	4		30.07	7.8

O. Arg. S. 542.

Oct.	19	0 51	29.61	8.5
	26		29.69	8.3
	31		29.65	
Dec.	7		29.60	7.6
	14		(29.42)	8.0

α Sculptoris.

Aug.	3	0 51	51.50	4.7
	28		51.34	4.5
	30		51.43	
Nov.	6		51.45	5.5

LALANDE 1737.

863.	h. m. s.	Mag.
9	0 53 23.91	8.0
12	23.95	8.3
4	24.04	8.0

WEISSE O, 944.

9	0 54 24.62	7.8
12	24.77	7.8

WEISSE O, 946.

26	0 54 29.80	9.2
4	29.82	9.2

LACAILLE 276.

19	0 54 43.10	
6	43.03	

70 PISCIUM.

12	0 54 50.10	7.7
30	50.10	6.5
25	50.28	7.3
31	50.30	7.0
12	50.22	6.5
9	50.20	7.5

ε PISCIUM.

5	0 55 40.80	4.4
12	40.76	
17	40.77	
3	40.71	
30	40.72	
31	40.82	
25	40.84	
27	40.83	
28	40.79	
31	40.82	
12	40.80	
3	40.81	
7	40.73	
9	40.88	
14	40.76	

WEISSE O, 973.

28	0 55 43.49	9.0

σ SCULPTORIS.

2	0 55 45.28	5.2
9	45.43	5.4

B. A. C. 306.

5	0 57 56.08	6.3
9	55.93	6.3
30	55.94	6.0

WEISSE O, 1023.

9	0 58 31.21	9.0

WEISSE O, 1031.

28	0 58 55.56	8.6
9	55.54	8.9

O. ARG. S. 621.

26	0 59 4.40	9.0

O. ARG. S. 623.

26	0 59 11.74	8.5
3	11.62	9.0

O. ARG. S. 636.

1863.	h. m. s.	Mag.
Sept. 28	1 0 25.26	7.0
Oct. 12	25.12	7.0
31	25.15	

LACAILLE 310.

Aug. 3	1 0 25.25	6.0

29 CETI.

Jan. 17	1 0 46.66	7.0

e PISCIUM.

Jan. 12	1 1 9.52	
Aug 30	9.49	5.0
31	9.48	

(*) + 2° 2′.

Jan. 2	1 1 59.83	9.7
Aug. 28	59.70	9.5

WEISSE I, 20.

Jan. 1	1 3 1.00	9.5
Oct. 26	0.97	

LACAILLE 319.

Aug. 3	1 3 20.19	7.0

(*) + 2° 11′.

Aug. 28	1 5 50.40	9.2

ζ PISCIUM.

Jan. 9	1 6 25.16	5.5
Aug. 30	25.07	
Sept. 27	25.20	
28	25.22	6.0

LACAILLE 329.

Jan. 5	1 6 25.86	

B. A. C. 369.

Jan. 9	1 6 26.59	6.7
Aug. 30	26.60	
Sept. 27	26.62	
28	26.60	

a^1 URSÆ MINORIS.

April 21 S. P.	1 7 37.04	
25 S. P.	38.89	

(*) + 2° 17′.

Jan. 2	1 9 3.83	9.2

f PISCIUM.

Jan. 1	1 10 34.64	6.0

LACAILLE 362.

Jan. 2	1 13 47.00	6.4
5	46.83	7.1

43 CETI.

Aug. 3	1 15 25.35	6.0

B. A. C. 418.

1863.	h. m. s.	Mag.
Jan. 5	1 16 54.49	6.2
7	54.49	6.9

θ CETI.

Jan. 1	1 17 1.59	
9	1.60	3.2
12	1.59	3.8
17	1.63	
May 27	1.64	
Aug. 3	1.53	
28	1.57	
Sept. 27	1.57	
28	1.56	
Oct. 9	1.45	
12	1.62	
26	1.66	
Nov. 4	1.51	
12	1.59	
13	1.57	
Dec. 1	1.59	
3	1.57	
10	(1.88)	

LALANDE 2612.

Nov. 13	1 19 15.50	8.5

B. A. C. 433.

Aug. 3	1 19 17.51	6.7
Nov. 13	17.48	7.5

WEISSE I, 330.

Aug. 28	1 20 2.42	7.3
Oct. 9	2.25	8.3

(*) — 18° 0′.

Sept. 28	1 20 16.66	7.0

WEISSE 335.

Aug. 28	1 20 20.35	8.3
Oct. 9	20.25	8.7

LACAILLE 403.

Jan. 5	1 20 41.17	5.4

A CASSIOPEÆ.

May 21 S. P.	1 20 52.59	

O. ARG. S. 850, (1st *.)

Oct. 26	1 21 15.95	9.0

O. ARG. S. 850, (2d *.)

Oct. 26	1 21 16.75	8.0

LACAILLE 407.

Jan. 7	1 21 17.04	6.2
9	16.95	6.7
Oct. 12	17.08	6.5

LACAILLE 408.

Dec. 1	1 21 26.18	7.6

B. A. C. 452.

1863.	h. m. s.	Mag.
Jan. 9	1 23 46.81	6.3
12	46.98	6.8
Aug. 28	46.82	6.0

η PISCIUM.

Jan. 5	1 23 59.81	3.4
7	59.80	3.8
12	59.77	3.6
Mar. 2	59.84	
July 8	59.82	
Aug. 3	59.66	4.5
5	59.70	
31	59.82	
Sept. 27	59.66	
28	59.78	
Oct. 9	59.80	
12	59.71	
26	59.76	
Nov. 6	59.80	
12	59.81	
13	59.75	
Dec. 4	59.85	
14	59.73	
16	59.79	

LACAILLE 435.

Dec. 3	1 25 20.80	7.8

LACAILLE 436.

Dec. 1	1 25 28.74	7.3

LACAILLE 438.

Jan. 9	1 25 45.33	8.5

WEISSE I, 450.

Dec. 14	1 26 29.08	8.0

LACAILLE 444.

Aug. 28	1 26 35.42	6.2
Dec. 4	35.53	6.5

LACAILLE 452.

Dec. 3	1 27 45.98	7.7

LACAILLE 453.

Jan. 5	1 27 52.93	6.5
7	52.91	
Dec. 9	52.83	6.7

LACAILLE 456.

Jan. 9	1 28 13.51	6.5

(*) — 28° 55′.

Oct. 31	1 28 13.79	7.3

101 PISCIUM.

Aug. 3	1 28 17.45	5.8

LALANDE 2942.

Oct. 19	1 29 3.85	7.0
Nov. 6	(3.67)	7.0
Dec. 4	3.87	7.3

π Piscium.

1863.		h.	m.	s.	Mag.
Oct.	26	1	29	40.82	

105 Piscium.

Aug.	31	1	32	7.91	

B. A. C. 504.

Jan.	7	1	32	15.66	6.5
Aug.	28			15.55	6.0

(*) + 2° 49′.

Jan.	17	1	32	19.89	9.0

Weisse I, 562.

Jan.	17	1	32	29.46	8.5

Lacaille 480.

Jan.	2	1	32	48.96	8.0
	5			48.89	7.0
	12			48.80	7.4

Weisse I, 576.

Dec.	3	1	33	4.32	7.2

O. Arg. S. 992.

Dec.	1	1	33	16.64	7.3
	4			16.60	7.0
	14			16.50	7.0

ν Piscium.

Jan.	1	1	34	8.89	
	9			8.88	4.8
	12			8.90	4.2
	23			8.88	
Aug.	3			8.96	
	23			8.96	
Sept.	29			8.77	
Oct.	19			8.88	
	31			(9.04)	
Nov.	6			8.82	
	13			8.88	
Dec.	7			8.96	
	9			8.95	

107 Piscium.

Jan.	25	1	34	54.08	

Weisse I, 628.

Jan.	17	1	34	56.13	9.0

Weisse I, 669.

Dec.	4	1	36	55.69	9.0
	9			55.69	8.8
	14			55.53	8.5

ο Piscium.

Jan.	1	1	38	0.21	
	2			0.36	
	5			0.25	3.8
	7			0.31	4.5
July	8			0.31	
Aug.	30			0.17	
	31			0.22	

Lacaille 509.

1863.		h.	m.	s.	Mag.
Jan.	9	1	38	32.14	7.0
	12			32.23	7.6

O. Arg. S. 1049.

Dec.	7	1	38	44.42	8.5

(*) — 27° 4′.

Oct.	17	1	39	2.81	7.3

O. Arg. S. 1052.

Oct.	31	1	39	3.48	
Dec.	1			3.56	7.8
	7			3.57	7.3

ε Sculptoris.

Sept.	29	1	39	5.35	6.0
Dec.	3			5.27	6.3

O. Arg. S. 1056.

Oct.	31	1	39	14.79	8.4

Lacaille 513.

Dec.	8	1	39	32.42	7.6

Weisse I, 721.

Dec.	4	1	40	21.13	9.0
	9			21.21	9.0
	14			21.07	8.7

O. Arg. S. 1066.

Nov.	18	1	40	31.94	7.7

Santini 102.

Dec.	3	1	41	19.54	7.2

Lacaille 527.

Jan.	12	1	42	7.58	7.0
Sept.	28			7.52	7.0

Lalande 3344.

Dec.	4	1	42	34.36	9.0
	9			34.34	8.8
	14			34.21	8.3

Weisse I, 755.

Jan.	17	1	42	49.33	9.0

Weisse I, 767.

Sept.	1	1	43	26.55	
Oct.	17			26.70	

Weisse I, 773.

Jan.	1	1	43	30.86	8.5
Nov.	18			30.92	7.8

Lacaille 535.

1863.		h.	m.	s.	Mag.
Jan.	5	1	43	34.49	6.8
	7			34.48	7.6
Sept.	29			34.50	7.5
Dec.	1			34.51	6.9

Weisse I, 800.

Jan.	1	1	45	27.38	9.0

Weisse I, 807.

Dec.	9	1	45	31.55	8.3

γ¹ Arietis Southern Star.

Jan.	5	1	45	51.25	4.3
	12			51.17	4.6

γ² Arietis.

Jan.	5	1	45	51.19	4.5

ξ Piscium.

Dec.	4	1	46	18.61	

β Arietis.

Jan.	9	1	46	54.73	3.2
Feb.	7			54.84	
	10			54.74	
	16			54.73	
	23			54.82	
	25			54.70	
May	27			54.76	
June	8			54.77	
July	8			54.74	
Aug.	5			54.76	
Sept.	1			54.77	
Oct.	17			54.76	
	31			54.72	
Nov.	2			54.81	
	18			54.76	
Dec.	1			54.72	
	2			54.80	
	3			54.80	
	8			54.78	

Weisse I, 860.

Jan.	17	1	48	21.15	9.0

Lacaille 566.

Jan.	7	1	49	29.19	8.0
	12			29.03	7.7

ι Arietis.

Jan.	25	1	49	42.45	
Sept.	1			42.47	

O. Arg. S. 1179.

Sept.	28	1	49	48.87	7.7
Dec.	9			48.76	7.8

56 Ceti.

Dec.	3	1	50	6.84	6.0

48 Cassiopeæ.

1863.		h.	m.	s.	Mag.
Jan.	23	1	50	31.41	

Lacaille 570.

Jan.	9	1	50	32.85	7.8
	12			32.96	7.4
Nov.	18			32.87	

50 Cassiopeæ.

Jan.	5	1	51	32.90	4.0
June	10 S. P.			33.62	

Lacaille 586, (1st star.)

Sept.	28	1	52	28.03	7.2
Nov.	18			28.01	7.0
Dec.	3			27.90	7.7

Lacaille 586, (2d star.)

Sept.	28	1	52	28.46	7.0
Nov.	18			28.34	7.0
Dec.	3			28.47	7.4

O. Arg. S. 1219.

Dec.	8	1	52	54.73	9.5

Weisse I, 943.

Jan.	17	1	53	17.73	8.5

Lacaille 598.

Jan.	5	1	54	14.31	6.8
	9			14.14	6.8

Weisse I, 963.

Jan.	1	1	54	22.96	9.0

Lacaille 607.

Jan.	7	1	56	3.25	6.5

O. Arg. S. 1256.

Nov.	18	1	56	12.60	7.5
Dec.	4			12.54	7.5

B. A. C. 641.

Jan.	23	1	57	28.24	7.0

B. A. C. 643.

Jan.	7	1	58	12.84	4.3
	9			12.75	4.5
Nov.	18			12.82	5.5

Weisse I, 1043

Jan.	17	1	59	7.12	8.3

α Arietis.

Jan.	5	1	59	17.30	2.2
	12			17.22	2.2

α Arietis—Continued.

363.		h. m. s.	Mag.
.	19	1 59 17.21	
	31	17.31	
'.	7	17.34	
	10	17.34	
	16	17.27	
	23	17.29	
.	11	(17.18)	
	27	17.30	
il	1	17.29	
.e	8	17.28	
y	8	17.27	
.	5	17.23	
t.	1	17.22	
	29	17.17	
.	4	17.22	

Weisse I, 1047.

.	17	1 59 20.24	9.2

Weisse I, 1050.

.	17	1 59 20.68	9.0

Weisse I, 1071.

.	1	2 0 12.71	8.0

Weisse I, 1080.

.	1	2 0 54.53	7.7

Lacaille 638.

.	18	2 1 49.13	7.0
.	8	49.36	

(*) + 52° 24′.

.	23	2 2 1.20	9.0

Lacaille 639.

.	5	2 2 36.44	7.4
	7	36.47	7.2
	9	36.41	7.5
t.	28	36.60	7.0
.	9	36.47	7.3
	15	36.62	7.7

15 Arietis.

.	5	2 2 52.25	

Lacaille 644.

.	12	2 3 9.88	6.7
	19	9.97	

Lalande 4015.

.	23	2 4 12.23	7.3

Weisse II, 38.

.	1	2 4 20.64	8.7

(*) + 8° 14′.

.	25	2 4 29.15	8.5

Weisse II, 44.

1863.		h. m. s.	Mag.
Jan.	25	2 4 34.83	8.0

O. Arg. S. 1376.

Dec.	9	2 4 55.16	6.7

Lalande 4070.

Dec.	8	2 5 7.95	

19 Arietis.

Jan.	17	2 5 25.42	7.0

O. Arg. S. 1384.

Dec.	9	2 5 26.23	7.5

ξ^1 Ceti.

Jan.	5	2 5 35.04	4.6
	7	34.98	4.2
	9	34.99	5.0
	19	34.99	
	25	35.02	4.5
July	8	35.07	
Aug.	5	34.97	
Sept.	28	35.01	
	29	35.01	
Nov.	18	35.00	
Dec.	14	35.02	

O. Arg. S. 1388.

Dec.	3	2 5 47.90	9.0

O. Arg. S. 1404.

Dec.	3	2 7 10.97	9.5

Weisse II, 109.

Jan.	17	2 8 17.56	8.2
	23	17.59	8.5

Lacaille 678.

Jan.	7	2 8 36.62	7.5
	9	36.55	7.3

O. Arg. S. 1424.

Dec.	9	2 8 49.84	8.2

O. Arg. S. 1433.

Sept.	28	2 9 19.76	7.4

67 Ceti.

Jan.	12	2 10 0.06	5.3
	19	0.08	
Sept.	29	(0.35)	
Oct.	26	0.16	
Dec.	3	0.14	

θ Arietis.

Aug.	5	2 10 20.71	

Weisse II, 168.

1863.		h. m. s.	Mag.
Jan.	17	2 11 29.85	8.0

(*) — 5° 35′.

Jan.	17	2 11 31.09	9.0

Weisse II, 185.

Jan.	17	2 12 38.30	9.0

B. A. C. 722.

Jan.	1	2 12 38.69	7.0
	23	38.83	

B. A. C. 723.

Jan.	12	2 12 42.05	6.5
	19	42.12	6.8
Sept.	28	42.07	6.0

(*) + 12° 54′.

Dec.	9	2 13 1.72	9.0

Lacaille 699.

Jan.	7	2 13 30.39	8.0
Dec.	3	30.39	8.0

Lalande 4410.

Oct.	26	2 15 29.38	6.0
Dec.	3	29.26	6.5

Lacaille 711.

Sept.	28	2 15 49.52	6.3

Weisse II, 250.

Jan.	1	2 16 24.42	7.0
	17	24.53	7.5
	23	24.57	

B. A. C. 743.

Jan.	7	2 17 8.50	6.2
	12	8.48	7.2
Dec.	9	8.56	6.5

ι Cassiopeæ.

Jan.	9	2 17 34.85	
June	10 S. P.	35.16	

Lacaille 727.

Sept.	28	2 18 58.47	7.0
Oct.	26	58.55	7.0
Dec.	9	58.47	7.0

B. Z. 27, 25.

Jan.	1	2 19 3.13	8.5

B. Z. 27, 26.

Jan.	1	2 19 16.35	9.5

ξ^2 Ceti.

1863.		h. m. s.	Mag.
Jan.	5	2 20 43.20	
	23	43.22	
July	8	43.21	
Sept.	29	43.27	

Lacaille 744.

Jan.	7	2 22 1.12	7.5
	12	1.05	8.0

Lacaille 750.

Oct.	26	2 22 40.68	6.5
Dec.	9	40.67	7.5

Weisse II, 373.

Jan.	17	2 22 56.25	9.0

27 Arietis.

Sept.	28	2 23 8.84	5.8

Lacaille 756.

Jan.	19	2 23 10.94	7.0
Dec.	3	10.98	7.0

Weisse II, 386.

Jan.	1	2 23 23.48	9.0

B. A. C. 775.

Sept.	2	2 24 9.80	6.7

Lacaille 771.

Jan.	7	2 25 38.84	7.4
Dec.	4	38.72	7.0

Lacaille 772.

Sept.	2	2 26 18.22	7.3
Dec.	3	18.35	7.0
	9	18.34	7.0

Weisse II, 437.

Jan.	17	2 26 55.11	8.0
	23	55.17	

B. A. C. 790, (1st star.)

Oct.	31	2 27 42.03	9.0

B. A. C. 790, (2d star.)

Oct.	31	2 27 42.78	7.4

O. Arg. S. 1655.

Sept.	30	2 28 30.23	7.6
Dec.	4	30.20	7.0

Weisse II, 470.

Jan.	1	2 28 31.14	8.5

18[illegible]		h. m. s.	Mag.
Oct.	[illegible]	[illegible]	[illegible]
A[illegible]	[illegible]	[illegible]	

[illegible]

[illegible]	[illegible]	[illegible]	7.0
		10.96	

[illegible]

[illegible]	[illegible]	[illegible]	9.0

Lacaille [illegible].

[illegible]	[illegible]	[illegible] (57.70)	7.4
	[illegible]	[illegible]	7.5

Lacaille [illegible].

[illegible]	[illegible]	2 31 21.54	7.0
	[illegible]	21.49	7.3
[illegible]	[illegible]	21.60	7.0

Lacaille [illegible].

[illegible]	[illegible]	2 32 41.95	6.5
[illegible]	[illegible]	41.87	7.0

Lacaille [illegible]14.

[illegible]	[illegible]	2 32 57.78	
[illegible]	[illegible]	57.74	7.0
[illegible]	[illegible]	57.70	
[illegible]	[illegible]	57.92	7.2

Weisse II, 566.

Jan.	17	2 33 8.78	9.0

Weisse II, 576.

Jan.	23	2 33 35.24	8.0

Weisse II, 574.

[illegible]	1	2 33 35.25	8.8

[illegible]

			Mag.
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible] 2.95	
		2.97	
		2.99	
		2.93	
		2.87	
		2.98	
		2.88	
		2.96	
		2.93	
		3.00	
		2.94	

Lacaille 838.

[illegible]	26	2 36 45.52	6.7

Weisse II, 640.

Jan.	1	2 37 21.69	8.7
	17	21.68	8.5
	23	21.70	8.5

B. A. C. 854.

Oct.	31	2 38 1.21	

Lacaille 865.

Jan.	19	2 39 56.36	7.2
Sept.	30	56.38	7.0

Lacaille 873.

Oct.	31	2 40 52.74	
Dec.	9	52.88	6.5

π Arietis.

Sept.	2	2 41 29.00	5.5
	29	28.99	
Oct.	26	29.10	6.0

B. Z. 530, 60.

Jan.	23	2 42 5.11	7.5

O. Arg. S. 1834.

Jan.	19	2 42 43.23	7.6

B. Z. 337, 8.

Jan.	17	2 42 49.01	8.5

O. Arg. S. 1838.

Sept.	30	2 43 11.70	8.0
Dec.	7	11.73	8.0

B. A. C. 883.

Jan.	7	2 43 50.30	5.0
	12	50.34	5.4
Sept.	2	50.26	6.2

Lalande 5315.

Oct.	31	2 44 33.13	

B. A. C. 894.

1863.		h. m. s.	Mag.
Sept.	30	2 46 0.54	6.2

Lalande 5358.

Jan.	17	2 46 29.15	7.3

(*) — 23° 39′.

Oct.	26	2 46 33.43	7.6

Lacaille 908.

Jan.	7	2 47 0.12	6.0
	12	0.12	6.8
Sept.	2	0.21	6.5

Lacaille 910.

Jan.	19	2 47 17.16	6.0
Feb.	4	17.12	

(*) + 25° 32′.

Jan.	1	2 47 19.95	8.5

B. Z. 333, 72.

Jan.	23	2 47 52.78	8.0

ρ^3 Arietis.

Sept.	29	2 48 32.19	
Oct.	26	32.31	5.8

Lacaille 918.

Sept.	30	2 48 43.76	6.4
Oct.	31	43.58	7.2

Lacaille 922.

Jan.	19	2 49 20.17	6.5
Feb.	4	20.16	6.8

Rumker 755.

Jan.	17	2 50 28.72	8.0
	23	28.71	8.5

Lacaille 932, (1st star.)

Jan.	7	2 51 3.56	7.7
Sept.	2	3.56	7.5

Lacaille 932, (2d star.)

Jan.	7	2 51 4.94	7.0
	19	4.94	7.0
Sept.	2	4.94	7.3

Lacaille 933.

Oct.	31	2 51 10.20	6.8

ε Arietis.

Feb.	23	2 51 12.74	
Aug.	5	12.66	

ε Arietis—Continued.

1863.		h. m. s.	Mag.
Aug.	6	2 51 12.79	
Sept.	30	12.78	
Oct.	26	12.52	
	27	(12.47)	

λ Ceti.

Jan.	1	2 52 12.82	6.0

B. A. C. 940.

Jan.	7	2 53 26.34	5.3
	19	26.41	5.7

B. Z. 337, 20.

Jan.	17	2 54 0.42	8.0
	23	0.48	8.3

Lacaille 959.

Sept.	20	2 54 43.03	
Oct.	26	43.11	7.2

α Ceti.

Jan.	3	2 54 57.94	
	7	57.89	
	12	57.89	2.3
Feb.	2	57.94	
	4	57.84	
	9	57.84	
	16	57.89	
Mar.	30	57.94	
April	1	57.90	
June	8	(58.01)	
July	9	57.88	
Aug.	5	57.97	
	6	57.83	
Sept.	29	57.92	
Oct.	31	57.87	

B. A. C. 951.

Sept.	2	2 55 35.62	6.2

τ^3 Eridani.

Jan.	19	2 56 13.22	4.2

O. Arg. S. 2000.

Sept.	30	2 57 32.45	8.5

(*) — 23° 40′.

Oct.	26	2 58 0.62	9.0

β Persei.

Jan.	23	2 59 4.33	3.0

53 Arietis.

Sept.	29	2 59 33.03	

κ Persei.

Jan.	1	3 0 4.10	
	3	4.03	5.0
Sept.	2	4.31	

1863.			h.	m.	s.	Mag.
Lacaille 981.						
Sept.	30	. .	3	0	48.01	
B. A. C. 978.						
Oct.	31	. .	3	1	51.92	6.8
Lacaille 983.						
Jan.	7	. .	3	2	28.75	7.5
Weisse III, 26.						
Jan.	23	. .	3	3	15.20	6.5
δ Arietis.						
Jan.	1	. .	3	3	37.72	
	3	. .			37.72	
	17	. .			37.75	
Feb.	4	. .			37.73	
	9	. .			37.69	
	16	. .			37.72	
	23	. .			37.76	
Aug.	5	. .			37.74	
	6	. .			37.73	
Sept.	2	. .			37.74	
	29	. .			37.88	
	30	. .			37.73	
Oct.	26	. .			(37.63)	
	27	. .			37.67	
Nov.	25	. .			37.78	
Lacaille 996.						
Oct.	31	. .	3	4	25.35	7.1
Weisse III, 95.						
Jan.	23	. .	3	6	12.06	8.0
Lacaille 1004.						
Jan.	7	. .	3	6	47.86	6.5
Feb.	2	. .			47.97	7.3
ζ Arietis.						
Jan.	12	. .	3	6	51.52	4.8
	17	. .			51.56	4.5
Feb.	4	. .			51.59	
	9	. .			51.55	
Sept.	2	. .			51.50	
Oct.	27	. .			(51.39)	
Lacaille 1010.						
Nov.	25	. .	3	7	23.21	6.5
B. A. C. 1012.						
Oct.	31	. .	3	8	58.93	7.0
B. Z. 506, 55.						
Jan.	23	. .	3	10	25.14	7.8
B. A. C. 1019.						
Sept.	30	. .	3	10	25.30	
Nov.	25	. .			25.09	

1863.			h.	m.	s.	Mag.
ι Persei.						
Jan.	1	. .	3	12	4.61	
	3	. .			4.63	
15 Eridani.						
Oct.	31	. .	3	12	10.68	6.0
τ Arietis.						
Sept.	2	. .	3	13	8.96	5.5
Oct.	27	. .			8.92	
Weisse III, 233.						
Jan.	23	. .	3	13	42.28	8.5
α Persei.						
Jan.	19	. .	3	14	20.66	
Feb.	4	. .			20.65	
	14	. .			20.60	
	16	. .			20.63	
April	10	. .			20.74	
B. A. C. 1047.						
Oct.	31	. .	3	14	46.37	7.2
B. A. C. 1049.						
Sept.	30	.	3	15	17.15	
Nov.	25	. .			17.11	6.0
(*) + 24° 55′.						
Jan.	3	. .	3	15	26.89	9.0
O. Tauri.						
Feb.	9	. .	3	17	16.89	
Lacaille 1079.						
Oct.	31	. .	3	17	46.18	
O. Arg. S. 2245.						
Sept.	30	. .	3	17	53.64	
Nov.	25	. .			53.49	6.5
B. Z. 448, 25.						
Jan.	23	. .	3	18	23.31	8.2
Weisse III, 334.						
Jan.	3	. .	3	19	36.23	7.0
Sept.	2	. .			36.22	7.0
B. A. C. 1073.						
Sept.	30	. .	3	20	28.03	
Nov.	25	. .			27.87	6.0
Lacaille 1102.						
Oct.	31	. .	3	20	53.54	

1863.			h.	m.	s.	Mag.
B. A. C. 1061.						
May	22	S. P.	3	21	0.31	
Groombridge 698.						
Jan.	1	. .	3	22	44.29	7.0
	23	. .			44.42	7.5
Sept.	2	. .			44.36	7.3
Lacaille 1113.						
Nov.	25	. .	3	23	28.52	6.6
Lacaille 1114.						
Feb.	2	. .	3	23	36.45	7.0
(*) + 7° 6′.						
Jan.	3	. .	3	23	44.32	9.5
Weisse III, 428.						
Jan.	3	. .	3	24	35.02	7.7
Lacaille 1127.						
Feb.	2	. .	3	25	53.14	
ε Eridani.						
Jan.	1	. .	3	26	20.08	
	12	. .			20.17	3.5
	19	. .			20.17	4.2
Feb.	4	. .			20.24	
	16	.			20.18	
Sept.	2	. .			20.25	4.5
Oct.	27	. .			20.10	
	28	. .			20.11	
Nov.	25	. .			20.13	
9 Tauri.						
Sept.	30	. .	3	28	44.45	
Oct.	27	. .			44.30	
Lacaille 1137.						
Sept.	2	. .	3	28	53.98	6.6
Nov.	25	. .			53.95	6.5
B. Z. 506, 79.						
Jan.	3	. .	3	30	8.33	7.5
11 Tauri.						
Jan.	1	. .	3	32	24.92	
Feb.	9	. .			24.93	
Sept.	2	. .			25.00	
Lacaille 1160.						
Jan.	19	. .	3	32	32.41	8.0
B. A. C. 1130.						
Nov.	25	. .	3	32	58.26	6.5

1863.			h.	m.	s.	Mag.
δ Persei.						
Jan.	29	. .	3	32	58.29	
Radcliffe 1041.						
Jan.	3	. .	3	34	4.70	6.5
Lacaille 1186.						
Feb.	13	. .	3	35	58.14	
O. Arg. S. 2468.						
Nov.	25	. .	3	36	1.72	8.5
16 Tauri.						
Feb.	16	. .	3	36	29.22	
17 Tauri.						
Jan.	29	. .	3	36	33.93	
Feb.	14	. .			34.02	
Sept.	2	. .			33.96	
Oct.	28	. .			34.08	
1 Pleiadum.						
Jan.	29	. .	3	37	7.71	
7 Pleiadum.						
Jan.	29	. .	3	37	33.03	
Weisse III, 845.						
Jan.	29	. .	3	37	54.59	
Feb.	14	. .			54.71	
9 Pleiadum.						
Jan.	29	. .	3	37	56.90	
Feb.	14	.			56.97	
10 Pleiadum.						
Feb.	14	. .	3	38	7.97	
Lacaille 1199.						
Nov.	25	. .	3	38	12.26	7.2
B. A. C. 1163.						
Feb.	16	. .	3	38	39.17	
15 Pleiadum.						
Feb.	14	. .	3	38	57.40	
18 Pleiadum.						
Feb.	14	. .	3	39	0.25	
24 Tauri.						
Jan.	1	. .	3	39	2.11	
	29	. .			1.91	
Feb.	12	. .			1.99	
	16	. .			2.01	
Sept.	2	. .			1.99	

η Tauri.

1863.		h.	m.	s.	Mag.
Jan.	1	3	39	10.08	
	19			10.03	3.3
	23			10.07	
	29			10.00	
Feb.	2			10.17	3.3
	9			10.13	
	13			10.06	
	14			10.06	
	16			10.05	
	23			10.04	
April	10			10.07	
Aug.	6			10.14	
Sept.	2			10.06	
Oct.	27			10.06	
	28			9.99	
	31			10.04	

Weisse III, 751.

Jan.	3	3	39	39.56	9.0

Weisse III, 752.

Jan.	3	3	39	40.66	8.2

τ^6 Eridani.

Nov.	25	3	40	49.35	4.0

27 Tauri.

Jan.	29	3	40	50.49	
Feb.	9			50.65	
	14			50.53	
	16			50.59	

28 Tauri.

Feb.	14	3	40	51.82	
	16			51.77	

(*) + 23° 40′.

Sept.	30	3	40	54.62	

(*) + 23° 44′.

Sept.	30	3	40	55.96	

B. A. C. 1188.

Feb.	16	3	41	39.40	

Lacaille 1231.

Feb.	13	3	42	6.71	

B. A. C. 1190.

Jan.	29	3	42	33.15	8.0
Feb.	14			33.15	
	16			33.18	

Radcliffe 1084.

Jan.	3	3	42	40.43	7.7

caille 1239.

		3	43	7.32	7.6

O. Arg. S. 2571.

1863.		h.	m.	s.	Mag.
Nov.	25	3	43	43.38	8.0

ζ Persei.

Feb.	9	3	45	20.34	

Lacaille 1252.

Oct.	31	3	45	45.03	

Lalande 7184.

Jan.	29	3	46	27.12	7.5

B. Z. 391, 127.

Jan.	1	3	46	35.84	9.0
	3			35.88	
Feb.	14			35.80	8.3

Lacaille 1259.

Feb.	13	3	46	45.11	7.0

B. Z. 391, 128.

Jan.	1	3	46	52.65	8.8
	3			52.52	
Feb.	14			52.50	

Lalande 7220.

Jan.	29	3	47	43.93	8.5

τ^6 Eridani.

Feb.	16	3	47	45.38	4.0

Lacaille 1271.

Nov.	25	3	47	54.11	6.5

Lalande 7238.

Jan.	29	3	48	10.36	8.0

33 Tauri.

Jan.	29	3	48	45.98	7.0
Feb.	23			46.01	6.0

Lacaille 1291.

Nov.	25	3	50	32.20	7.5

Lacaille 1288.

Feb.	16	3	50	33.00	7.0
Oct.	31			32.83	7.5

γ Eridani.

Jan.	5	3	51	30.02	3.2
	12			29.94	3.2
	19			29.95	2.7
Feb.	2			29.98	3.0
	6			29.95	
	9			30.03	
	13			29.98	
	14			29.93	
Sept.	30			29.97	
Oct.	28			29.99	

λ Tauri.

1863.		h.	m.	s.	Mag.
Jan.	29	3	52	55.53	4.0

(*) — 27° 17′.

Oct.	31	3	54	37.48	9.2

B. A. C. 1250.

Jan.	19	3	55	5.53	6 2
Feb.	2			5.65	6.4
Nov.	25			5.52	6.0

Lacaille 1317.

Jan.	5	3	55	31.15	7.0
	12			31.04	8.1
Feb.	14			31.06	7.0

A¹ Tauri.

Jan.	1	3	56	25.34	
Feb.	9			25.43	
	23			25.33	5.0
	24			25.41	
Sept.	30			(25.59)	
Oct.	27			25.35	
	28			25.41	

Lacaille 1324.

Feb.	13	3	56	40.68	7.3
	16			40.81	7.5

Lacaille 1326.

Oct.	31	3	56	40.90	7.2

Lacaille 1329.

Jan.	5	3	57	43.18	6.2
	12			43.11	6.8

c Persei.

Jan.	29	3	58	30.60	5.0

Lacaille 1341.

Jan.	19	3	59	17.79	8.6
Feb.	2			17.81	8.1
	14			17.71	7.0
Nov.	25			17.69	6.7

O. Arg. S. 2793.

Jan.	19	3	59	25.16	9.0
Feb.	2			25.24	9.0
	14			25.10	7.7

O. Arg. S. 2796.

Sept.	30	3	59	38.55	6.0

Lacaille 1346.

Feb.	16	4	0	5.01	

(*) — 31° 25′.

Dec.	9	4	0	13.40	8.0

Rumker 1104.

1863.		h.	m.	s.	Mag.
Jan.	29	4	3	41.94	9.0

Lacaille 1370.

Jan.	2	4	4	5.85	
Feb.	13			5.83	7.4

Lacaille 1374.

Feb.	14	4	4	47.05	6.5

Lacaille 1373.

Jan.	2	4	4	52.87	
Feb.	13			52.79	7.7

o^1 Eridani.

Jan.	6	4	5	1.97	
Feb.	16			2.05	
	23			2.04	
Sept.	4			2.02	
	30			2.06	
Oct.	27			2.15	
	31			1.96	
Nov.	25			1.90	4.5

Lacaille 1379.

Jan.	12	4	6	51.74	6.6
	19			51.73	6.7

B. Z. 521, 8.

Jan.	21	4	7	0.08	8.0

Lacaille 1387.

Feb.	14	4	7	39.73	6.0

B. A. C. 1308.

Feb.	13	4	8	30.10	7.1
	16			30.14	7.1

Lacaille 1389.

Feb.	2	4	8	33.59	6.7

B. Z 330, 7.

Jan.	6	4	8	50.56	7.0
Sept.	4			50.70	7.0

ω^2 Tauri.

Sept.	30	4	9	3.82	
Oct.	28			3.68	

Lacaille 1395.

Feb.	13	4	9	32.88	7.8
	16			32.96	8.0
Nov.	25			32.65	7.0

O. Arg. S. 2938.

Jan.	5	4	9	48.07	6.4

γ TAURI.

1863.		h. m.	s.	Mag.
Jan.	2	4 11	49.73	
	7		49.80	
Feb.	4		49.74	
	16		49.79	
	23		49.79	

LACAILLE 1410.

Feb.	2	4 12	35.29	7.5
	13		35.27	7.7

B. A. C. 1334.

Sept.	4	4 12	38.69	6.5
	30		38.68	6.5

B. A. C. 1340.

Jan.	19	4 13	51.31	6.6
Feb.	6		51.30	
Nov.	25		51.14	6.7

O. ARG. S. 2997.

Dec.	9	4 13	56.64	8.0

δ^1 TAURI.

Sept.	30	4 14	51.93	
Oct.	28		51.91	

(*) + 21° 12′.

Jan.	29	4 15	5.28	9.0

B. A. C. 1355.

Jan.	5	4 15	42.73	5.5
Feb.	2		42.80	5.6
Sept.	4		42.77	
Nov.	25		42.62	6.0

LACAILLE 1433.

Dec.	9	4 16	50.75	7.5

LACAILLE 1431.

Jan.	2	4 17	14.54	
Feb.	23		14.76	6.0
Sept	30		14.74	

LACAILLE 1449.

Feb.	23	4 20	16.19	

ε TAURI.

Jan.	3	4 20	26.67	
	5		26.75	3.5
	6		26.71	
	29		26.64	
Feb.	6		26.71	
	25		26.66	
Sept.	4		26.73	
	30		26.64	
Oct.	28		26.71	
Nov.	25		26.71	
Dec.	9		26.78	

LACAILLE 1451.

1863.		h. m.	s.	Mag.
Jan.	19	4 21	3.82	6.0
Feb.	2		3.85	5.7

LACAILLE 1459.

Feb.	13	4 21	52.15	7.6
	16		52.20	7.8

B. Z. 330, 27.

Jan.	3	4 23	22.51	8.0

LACAILLE 1474.

Feb.	2	4 23	47.51	6.8

85 TAURI.

Jan.	3	4 23	52.20	7.0
Nov.	25		52.18	6.0

LACAILLE 1480.

Feb.	16	4 24	9.65	7.5
	23		9.74	

LACAILLE 1485.

Feb.	13	4 24	22.72	7.5
	16		22.83	

LACAILLE 1483.

Jan.	19	4 24	37.22	
Feb.	6		37.31	

LALANDE 8577.

Dec.	9	4 24	53.28	7.8

LACAILLE 1419.

Feb.	13	4 25	45.94	7.3
	16		46.11	

LACAILLE 1501.

Feb.	13	4 26	30.37	7.2
	16		30.57	

LACAILLE 1504.

Jan.	5	4 26	49.51	7.5

B. Z. 393, 95.

Jan.	3	4 27	16.78	8.0

LACAILLE 1509.

Jan.	5	4 27	23.07	6.4

α TAURI.

Jan.	1	4 27	53.40	
	2		53.38	
	29		53.46	
Feb.	2		53.54	

χ TAURI—Continued.

1863.		h. m.	s.	Mag.
Feb.	13		53.44	
	16		53.48	
	23		53.42	
April	10		53.47	
	14		53.39	
	25		53.43	
	26		53.50	
May	9		53.45	
	11		53.54	
	12		53.36	
	15		53.46	
	16		53.47	
July	1		53.43	
	9		53.49	
Aug.	5		53.41	
	6		53.46	
	7		53.52	
	8		53.46	
Sept.	4		53.49	
Oct.	28		53.50	
Nov.	25		53.49	

(*) + 21° 55′.

Dec.	9	4 28	44.10	9.0

B. Z. 521, 33.

Feb.	14	4 29	40.53	9.0

LACAILLE 1531.

Feb.	2	4 30	54.71	8.3
	13		54.65	7.5
Nov.	25		54.54	7.0

B. Z. 393, 103.

Dec.	9	4 33	1.07	9.0

LACAILLE 1541.

Jan.	5	4 33	19.26	
	19		19.29	8.0
Nov.	25		19.22	7.0

B. Z. 393, 105.

Dec.	9	4 33	20.34	8.4

RUMKER 1250.

Jan.	29	4 33	48.24	7.0

τ TAURI.

Jan.	1	4 33	50.78	
	2		50.79	
	29		50.70	
Aug.	8		50.79	
Sept.	4		50.83	

WEISSE IV, 732.

Jan.	3	4 34	0.87	8.5

(*) — 28° 26′.

Feb.	2	4 34	2.35	10.0

B. A. C. 1450.

Feb.	6	4 34	17.48	
	13		17.45	5.7

LACAILLE 1549.

1863.		h. m.	s.	Mag.
Jan.	5	4 35	6.88	7.3
Feb.	2		6.88	7.4
Nov.	25		6.68	6.7

LALANDE 8870.

Jan.	29	4 35	29.84	7.0

LALANDE 8923.

Feb.	14	4 37	6.32	7.8

WEISSE IV, 809.

Jan.	3	4 37	33.53	8.0

μ ERIDANI.

Jan.	1	4 38	30.26	
	19		30.20	4.0
Feb.	2		30.17	4.4
	6		30.22	
	13		30.18	4.0
	14		30.19	
	25		30.20	
Sept.	4		30.22	
Oct.	28		30.27	
Dec.	9		30.16	

LACAILLE 1570.

Feb.	23	4 38	53.07	7.0
Nov.	25		52.82	6.5

α CAMELOPARDI.

Feb.	6	4 40	9.42	
	13		9.42	4.0
	16		9.25	4.4
May	4 S. P.		9.66	

B. Z. 521, 49.

Jan.	29	4 40	40.50	8.5

WEISSE IV, 888.

Jan.	3	4 41	32.85	8.5

i TAURI.

Sept.	4	4 43	11.23	
Nov.	25		11.20	5.5
Dec.	23		11.14	

O. ARG. N. 5260.

Jan.	6	4 44	15.56	7.3
	29		15.76	7.5
Feb.	14		15.46	7.0

LACAILLE 1613.

Jan.	5	4 44	53.04	6.3
Feb.	13		52.90	8.0

LACAILLE 1615.

Feb.	2	4 45	21.88	7.2
	6		21.92	

B. A. C. 1511.

1863.		h. m. s.	Mag.
Feb.	25	4 46 22.62	

Lalande 9207.

Jan.	3	4 46 41.05	8.0

ι Aurigæ.

Jan.	5	4 47 52.86	3.1
	19	52.82	2.8
Feb.	6	52.88	
	14	52.74	4.0
	16	52.87	3.5
Aug.	8	52.82	
Sept.	4	52.79	
Dec.	23	52.81	

Lacaille 1642.

Feb.	23	4 48 7.44	7.0

Lalande 9261.

Jan.	3	4 48 46.11	7.5

Lacaille 1652.

Feb.	23	4 49 15.23	6.5
	25	15.35	

Lalande 9291.

Jan.	3	4 49 35.07	8.0

Lacaille 1648.

Feb.	2	4 49 46.54	6.4

(*) + 1° 26′.

Jan.	3	4 50 20.27	9.5

B. Z. 393, 127.

Jan.	6	4 51 45.09	8.0

B. Z. 393, 128.

Jan.	6	4 52 8.81	8.2

(*) — 28° 47′.

Jan.	5	4 53 2.70	6.0
Feb.	6	2.62	

Lacaille 1673.

Jan.	5	4 53 36.44	6.8
Feb.	6	36.48	
	23	36.47	6.8

(*) — 28° 47′.

Jan.	19	4 54 28.62	8.7

ι Tauri.

Feb.	25	4 54 43.77	
Sept.	4	43.83	

B. Z. 398, 110.

1863.		h. m. s.	Mag.
Feb.	14	4 55 18.23	7.0

B. Z. 398, 111.

Jan.	6	4 55 37.13	8.0
Feb.	14	37.16	8.5

B. Z. 398, 112.

Jan.	6	4 55 38.46	8.0
Feb.	14	38.36	8.5

11 Orionis.

Jan.	5	4 56 34.27	
Oct.	29	34.36	

B. Z. 398, 116.

Jan.	6	4 59 31.15	8.5

***l* Tauri.**

Feb.	25	4 59 31.39	

ε Leporis.

Jan.	3	4 59 32.18	
Feb.	6	32.12	
	13	32.06	2.9
	23	32.21	3.7
Dec.	23	32.20	

B. Z. 513, 5.

Jan.	6	5 3 39.22	8.3
Feb.	14	39.21	8.8

Lacaille 1738.

Feb.	16	5 5 3.41	6.8
Oct.	29	3.39	6.3

(*) + 30° 14′.

Jan.	6	5 5 5.26	9.0

B. Z. 513, 7.

Jan.	6	5 5 17.48	7.5
Feb.	14	17.50	7.5

B. A. C. 1615.

Jan.	3	5 6 6.43	

α Aurigæ.

Feb.	7	5 6 20.93	
	13	21.08	
Mar.	2	21.00	
April	25	20.98	
May	2	21.22	
	9	21.29	
	28	21.15:	
Aug.	8	21.31	

Lacaille 1753.

Feb.	23	5 7 15.86	6.8
Oct.	29	15.71	6.5

(*) — 27° 20′.

1863.		h. m. s.	Mag.
Feb.	23	5 7 19.91	7.3
Oct.	29	19.77	

β Orionis.

Jan.	2	5 7 48.71	
	19	48.63	
Feb.	13	48.63	
	16	48.73	
	25	48.72	
April	25	48.68	
May	12	48.76	
	15	48.61	
	16	48.63	
	19	48.67	
	22	48.69	
July	21	48.67	
Aug.	8	48.63	
Nov.	26	48.66	

Lacaille 1763.

Feb.	2	5 8 50.22	6.6
	23	50.29	7.0

κ Tauri.

Nov.	26	5 10 52.02	
Dec.	23	52.04	6.0

Lacaille 1779.

Jan.	3	5 10 52.42	
Feb.	16	52.34	

B. Z. 513, 14.

Jan.	6	5 11 2.72	8.5

Lacaille 1787.

Feb.	23	5 11 41.85	7.7
Mar.	2	41.73	7.3

B. A. C. 1655.

Mar.	2	5 13 48.91	4.7

Lacaille 1798.

Feb.	23	5 14 5.53	6.9
	23	5.59	6.2

B. A. C. 1670, (1st star.)

Jan.	3	5 16 1.61	5.5
Feb.	13	1.45	6.2
	16	1.57	7.0

B. A. C. 1670, (2d star.)

Jan.	3	5 16 1.75	8.0
Feb.	16	1.85	10.0

B. Z. 513, 24.

Nov.	25	5 16 36.55	7.5
Dec.	23	36.66	8.5

B. Z. 513, 25.

Nov.	25	5 16 38.61	8.0
Dec.	23	38.68	9.0

β Tauri.

1863.		h. m. s.	Mag.
Jan.	2	5 17 26.73	
	6	26.61	
	29	26.64	
Feb.	7	26.61	
	14	26.62	
	25	26.61	
Mar.	2	26.64	
May	2	26.73	
	16	26.62	
July	19	26.62	
	21	26.60	
	22	26.59	
Aug.	8	26.68	
Sept.	5	26.65	
Oct.	29	26.55	

B. A. C. 1688.

Feb.	2	5 17 34.45	6.2

Lacaille 1827.

Feb.	23	5 17 57.57	7.7

115 Tauri.

Nov.	26	5 19 0.19	

B. A. C. 1708.

Feb.	14	5 20 33.57	7.0

B. A. C. 1706.

Feb.	16	5 21 1.47	5.5
	23	1.50	5.7
	25	1.36	

B. A. C. 1713.

Feb.	2	5 21 47.35	7.0
	13	47.16	7.6

(*) — 26° 41′.

Oct.	29	5 22 3.54	8.0

(*) + 70° 16′.

Jan.	6	5 22 36.10	9.5

O. Arg. N. 5930.

Jan.	6	5 22 55.21	8.0
Feb.	7	55.04	

Rumker 1450.

Jan.	3	5 23 13.49	8.0

(*) — 0° 24′.

Feb.	14	5 23 31.53	9.0

Weisse V, 603.

Feb.	14	5 24 51.27	9.0
Nov.	25	51.27	

δ Orionis.

1863.		h. m.	s.	Mag.
Jan.	2	5 24	51.23	
	29		51.32	
Feb.	13		51.36	2.2
	14		51.34	
Mar.	2		51.34	2.7
April	25		51.30	
May	2		51.43	
July	22		51.30	2.5
	31		51.31	2.5
Sept.	4		51.38	
	5		51.35	
Oct.	29		51.36	
Nov.	25		51.36	
	26		51.28	

α Leporis.

Feb.	2	5 26	33.40	2.6
	16		33.42	3.0

B. A. C. 1761.

Mar.	2	5 28	28.50	6.6

ε Orionis.

Feb.	4	5 29	6.71	
	7		6.68	
	14		6.69	
Mar.	4		6.71	
July	19		6.62	
	22		6.63	2.0
	31		6.63	2.0
Nov.	25		6.71	
Dec.	24		6.65	

O. Arg. N. 6032.

Jan.	3	5 29	15.71	

ζ Tauri.

Jan.	29	5 29	16.76	
Sept.	4		16.79	
	5		16.78	
	6		16.79	
Oct.	29		16.80	
Nov.	26		16.78	

Lacaille 1906.

Dec.	24	5 30	35.93	7.4

(*) + 70° 12′.

Jan.	6	5 31	12.01	9.0

O. Arg. N. 6062.

Jan.	6	5 31	43.55	8.0
Mar.	4		43.51	

B. A. C. 1783.

Feb.	13	5 31	44.73	

Lacaille 1913.

Feb.	16	5 32	(5.40)	
Mar.	2		5.22	7.4

Lacaille 1918.

1863.		h. m.	s.	Mag.
Dec.	24	5 32	32.58	7.1

α Columbæ.

Feb.	2	5 34	34.81	3.0
	16		34.82	
Dec.	24		34.81	

Lacaille 1945.

Feb.	13	5 35	28.67	7.0

Lacaille 1946.

Dec.	24	5 35	40.62	7.8

O. Arg. N. 6159.

Jan.	3	5 35	57.01	7.5
	6		56.83	7.0

Lacaille 1960.

Feb.	2	5 36	48.06	8.7

B. A. C. 1812.

Mar.	2	5 36	51.47	5.7
	4		51.58	6.0

129 Tauri.

Nov.	26	5 38	42.54	
Dec.	24		42.53	

O. Arg. S. 4282.

Dec.	23	5 39	28.28	8.0

Lacaille 1977.

Mar.	2	5 39	58.25	
	4		58.23	

Lacaille 1978.

Feb.	2	5 40	25.52	7.1
Dec.	23		25.56	6.5
	24		25.49	7.6

(*) + 25° 44′.

Feb.	10	5 41	22.10	9.0

Lacaille 1991.

Feb.	13	5 41	47.09	7.8
Dec.	24		47.18	7.4

(*) 71° 36′.

Jan.	6	5 42	16.24	9.0
Mar.	2		16.34	9.4

(*) 71° 37′.

Jan.	6	5 42	19.04	8.8

O. Arg. N. 6250.

1863.		h. m.	s.	Mag.
Jan.	3	5 42	19.35	9.0
	6		19.27	8.8
Mar.	2		19.62	9.0
	4		19.33	

B. A. C. 1860.

Dec.	24	5 44	2.76	6.6

χ^1 Orionis.

Oct.	29	5 46	5.40	
Dec.	23		5.61	
	24		5.54	

Lacaille 2023.

Feb.	13	5 46	12.27	7.3

α Orionis.

Feb.	7	5 47	35.64	
	9		35.61	
	10		35.59	
	16		35.54	
Mar.	9		35.63	
May	9		35.60	
	11		35.66	
	15		35.56	
	16		35.58	
	19		35.62	
	20		35.61 :	
	28		35.57	
July	19		35.62	
	21		35.58	
Aug.	9		35.58	
Sept.	5		35.62	
	6		35.55	
Oct.	29		35.63	
Dec.	24		35.70	

B. A. C. 1894.

Mar.	2	5 48	48.40	

O. Arg. N. 6356.

Jan.	6	5 48	59.00	8.0

Lacaille 2048.

Dec.	24	5 49	3.22	

O. Arg. N. 6362.

Jan.	3	5 49	36.20	7.6

Lacaille 2062.

Feb.	13	5 50	44.41	6.4
Dec.	23		44.44	6.7

σ Columbæ.

Dec.	24	5 51	4.97	5.9

O. Arg. N. 6390.

Jan.	6	5 51	25.32	8.5
Mar.	2		25.48	8.8

(*) + 23° 16′.

1863.		h. m.	s.	Mag.
Nov.	26	5 52	34.98	

Lalande 11343.

Nov.	26	5 52	36.94	

B. A. C. 1915.

Dec.	24	5 52	42.67	7.1

B. Z. 518, 90.

Feb.	10	5 54	45.18	8.3

Lacaille 2096.

Feb.	9	5 55	31.97	

χ^4 Orionis.

Dec.	23	5 55	36.42	
	24		36.37	

1 Geminorum.

Jan.	3	5 55	36.70	5.0

(*) + 73° 34′.

Jan.	6	5 56	30.38	9.2
Mar.	2		30.56	9.7

B. A. C. 1946.

Feb.	9	5 57	37.27	
	13		37.18	4.8
Mar.	9		37.17	7.0:

(*) + 73° 35′.

Jan.	6	5 57	45.44	8.8
Mar.	2		45.68	9.2

Lalande 11513.

Feb.	10	5 57	58.20	6.5

Lalande 11528.

Feb.	10	5 58	29.17	6.7

ν Orionis.

Feb.	9	5 59	34.68	
	13		34.78	5.7
Mar.	4		34.70	
	5		34.78	
	9		34.71	
Oct.	28		34.72	
Nov.	26		34.80	
Dec.	23		34.78	

Lalande 11684.

Feb.	10	6 2	11.52	7.8
Dec.	23		11.57	7.5

LALANDE 11714.

1863.		h. m.	s.	Mag.
Feb.	10	6 3	3.12	9.8
Dec.	23		3.30	8.5

22 CAMELOPARDI.

Feb.	9	6 3	24.84	
	13		25.04	5.2
	16		24.52	
Mar.	2		24.81	

LACAILLE 2163.

Mar.	4	6 4	12.27	7.5

η GEMINORUM.

Jan.	3	6 6	25.60	
Sept.	5		25.57	
	6		25.61	
Oct.	3		25.44	
Nov.	26		25.58	

(*) —27° 35′.

Feb.	13	6 6	29.06	7.8

71 ORIONIS.

Dec.	23	6 6	36.60	

(*) —27° 42′.

Mar.	2	6 7	8.84	6.2
	4		8.83	6.8

(*) —27° 43′.

Mar.	2	6 7	10.27	6.8

(*) —27° 42′.

Mar.	2	6 7	22.94	7.0
	4		23.03	7.5

B. Z. 522, 159.

Feb.	10	6 7	27.19	8.5

LACAILLE 2190.

Feb.	9	6 7	58.26	

O. ARG. N. 6682.

Jan.	6	6 8	9.81	7.5

B. A. C. 2027.

Feb.	13	6 10	33.79	6.8
Mar.	4		33.78	6.5

B. Z. 511, 63.

Dec.	23	6 12	5.47	7.5

LACAILLE 2219.

Mar.	2	6 13	12.40	6.5

LACAILLE 2220.

1863.		h. m.	s.	Mag.
Mar.	2	6 13	31.99	6.8

μ GEMINORUM.

Jan.	3	6 14	29.42	
Feb.	4		29.33	
Mar.	27		29.41	
Sept.	5		29.43	
	6		29.39	
Dec.	24		29.37	
	25		29.44	

LACAILLE 2226.

Feb.	13	6 14	46.68	
Mar.	4		46.82	

LACAILLE 2254.

Feb.	9	6 18	6.32	

O. ARG. N. 6864.

Jan.	6	6 18	40.02	9.0

LACAILLE 2262.

Feb.	13	6 19	17.54	6.5
Mar.	4		17.56	7.0

LACAILLE 2271.

Feb.	9	6 20	16.42	
Mar.	2		16.31	6.2

(*) + 20° 20′.

Feb.	10	6 20	34.78	8.0

ν GEMINORUM.

Feb.	10	6 20	38.96	6.0
Oct.	3		39.02	
Dec.	23		38.96	
	24		38.97	

B. A. C. 2100.

Feb.	13	6 21	32.94	6.0

LACAILLE 2288.

Mar.	2	6 22	30.63	7.2
	4		30.74	7.7

LACAILLE 2306.

Mar.	2	6 24	42.65	7.3
Dec.	25		42.73	7.0

O. ARG. N. 7009.

Feb.	10	6 24	59.71	8.0

ξ^1 CANIS MAJORIS.

Feb.	9	6 26	1.35	
	13		1.48	4.0
Mar.	4		1.39	4.6

O. ARG. N. 7032.

1863.		h. m.	s.	Mag.
Dec.	23	6 26	21.29	8.9

LALANDE 12614.

Feb.	10	6 27	46.60	7.5

LACAILLE 2342.

Feb.	13	6 29	32.40	8.2

γ GEMINORUM.

Jan.	3	6 29	37.46	
	4		37.39	2.0
	6		37.42	
	31		37.46	
Feb.	3		37.45:	
	6		37.39	
	7		37.35	
	10		37.39	
	27		37.46	
Mar.	4		37.43	
	5		37.43	
	27		37.41	
May	19		37.50	
July	21		37.45	
Aug.	9		37.45	
	11		37.43	
	13		37.43	
	14		37.43	
Sept.	6		37.42	
Oct.	31		37.43	
Nov.	25		37.44	
Dec.	23		37.48	
	24		37.44	
	25		37.48	

LACAILLE 2355.

Feb.	9	6 30	41.08	
Mar.	2		40.90	6.7

LACAILLE 2366.

Feb.	9	6 31	34.26	
Mar.	2		34.23	6.8

LACAILLE 2370.

Feb.	13	6 32	33.17	7.0
Mar.	4		33.18	7.0

LACAILLE 2392.

Mar.	2	6 35	3.07	6.7

ε GEMINORUM.

Oct.	31	6 35	19.04	

LACAILLE 2413.

Mar.	2	6 37	38.82	6.5

LACAILLE 2420.

Mar.	4	6 38	19.37	7.5

α CANIS MAJORIS.

1863.		h. m.	s.	Mag.
Feb.	9	6 38	58.62	
	10		58.62	
	13		58.64	
	25		58.66	
	27		58.62	
Mar.	27		58.65	
May	9		58.68	
	15		58.68	
	16		58.68	
	19		58.69	
	20		58.75	
	21		58.56	
	22		58.69	
	23		58.74	
June	8		(58.74)	
	16		58.64	
	22		58.62	
Aug.	3		58.63	
	6		58.64	
	7		58.57	
	9		58.60	
	10		58.56	
	11		58.60	
	13		58.67	
	14		58.52	
	17		58.64	
Sept.	6		58.66	
Dec.	24		58.59	

LACAILLE 2427.

Mar.	4	6 39	16.76	6.5

O. ARG. S. 5654.

Oct.	31	6 40	28.48	8.5

LACAILLE 2443.

Feb.	23	6 40	50.13	7.0

LACAILLE 2448.

Feb.	9	6 41	56.81	
	13		56.88	8.0

LACAILLE 2448 (2d star.)

Feb.	13	6 41	57.79	8.8

LACAILLE 2454.

Feb.	13	6 43	5.25	
Mar.	2		5.19	7.0

O. ARG. S. 5725.

Feb.	13	6 43	6.65	9.0

LACAILLE 2461.

Feb.	23	6 43	49.63	7.0
	25		49.70	
Oct.	31		49.72	7.2

LACAILLE 2462.

Feb.	23	6 43	55.40	6.0
	25		55.42	
Oct.	31		55.40	6.4

LACAILLE 2464.

Feb.	9	6 43	56.21	

(*) — 27° 15′.

1863.			h. m. s.	Mag.
Mar.	4	. .	6 43 59.27	7.5

B. A. C. 2244.

Mar.	4	. .	6 44 30.17	

O. Arg. S. 5809.

Mar.	2	. .	6 45 58.25	6.5

O. Arg. S. 5814.

Mar.	2	. .	6 46 10.27	6.7

(*) — 24° 17′.

Feb.	23	. .	6 47 52.77	8.0
	25	. .	52.77	7.0

Lalande 13393.

Feb.	9	. .	6 48 8.34	
	25	. .	8.26	5.0

o¹ Canis Majoris.

Feb.	23	. .	6 48 19.44	
	25	. .	19.44	3.5

Lacaille 2507.

Feb.	13	. .	6 48 23.56	6.6
Mar.	4	. .	23.58	6.7

Lacaille 2519.

Nov.	1	. .	6 49 2.79	6.5

Lacaille 2524.

Mar.	2	. .	6 49 45.12	6.5

Lacaille 2526.

Feb.	13	. .	6 50 9.05	7.0
	23	. .	9.21	7.3

Lacaille 2528.

Nov.	1	. .	6 50 37.14	6.0

(*) — 24° 48′.

Mar.	4	. .	6 51 7.79	7.8

O. Arg. S. 5961.

Feb.	13	. .	6 52 6.91	5.6
Oct.	31	. .	6.99	7.0

(* 78) W. + 24° 40′.

Feb.	13	. .	6 52 19.58	8.3

Lacaille 2543.

Feb.	13	. .	6 52 30.24	5.6
	25	. .	30.30	
Mar.	2	. .	30.14	5.0

ε Canis Majoris.

1863.			h. m. s.	Mag.
Jan.	31	. .	6 53 7.51	
Feb.	9	. .	7.43	
	27	. .	7.46	
Mar.	9	. .	7.49	
Nov.	1	. .	7.50	

ω Geminorum.

Oct.	31	. .	6 53 52.88	

Lacaille 2560.

Mar.	4	. .	6 54 12.06	7.0

Lacaille 2571.

Mar.	4	. .	6 55 10.44	6.3

Lacaille 2570.

Feb.	25	. .	6 55 20.71	
Mar.	2	. .	20.65	4.2

ξ Geminorum.

Jan.	31	. .	6 55 48.20	
Feb.	27	. .	48.20	
Mar.	27	. .	48.25	
Oct.	31	. .	48.27	

Lacaille 2577.

Feb.	13	. .	6 55 56.08	

γ Canis Majoris.

Jan.	4	. .	6 57 25.52	4.0
	31	. .	25.46	
Feb.	3	. .	25.49	
	13	. .	25.48	3.8
Mar.	2	. .	25.37	3.0
	5	. .	25.49	
Nov.	1	. .	25.61	

Lacaille 2610.

Nov.	1	. .	7 0 36.68	6.0

(*) 79 W. + 22° 35′.

Dec.	25	. .	7 1 19.77	7.5

Lacaille 2617.

Feb.	25	. .	7 1 31.50	

τ Geminorum.

Oct.	31	. .	7 2 13.44	

δ Canis Majoris.

Jan.	31	. .	7 2 41.99	

Lacaille 2634.

Nov.	1	. .	7 2 58.91	6.5

O. Arg. S. 6311.

1863.			h. m. s.	Mag.
Nov.	1	. .	7 3 52.54	8.9

O. Arg. N. 7623.

Feb.	3	. .	7 3 53.22	7.0

Lacaille 2647.

Feb.	25	. .	7 4 42.01	

(*) — 30° 25′.

Dec.	25	. .	7 5 6.18	7.3

Lacaille 2655.

Feb.	25	. .	7 6 27.25	
Oct.	31	. .	27.17	

26 Canis Majoris.

Mar.	2	. .	7 6 28.48	

Lacaille 2666.

Nov.	1	. .	7 7 58.10	6.3

(*) — 14° 19′.

Dec.	23	. .	7 8 2.24	8.5

Weisse VII, 250.

Dec.	23	. .	7 8 44.74	7.0

B A. C. 2393.

Feb.	25	. .	7 9 11.80	

B. A. C. 2394.

Mar.	2	. .	7 9 12.34	7.0

B. A. C. 2399.

Mar.	2	. .	7 9 56.00	

λ Geminorum.

Jan.	4	. .	7 10 2.66	
	31	. .	2.72	
Mar.	27	. .	2.79	
Oct.	31	. .	2.72	
Nov.	1	. .	2.72	

B. A. C. 2320.

Aug.	27	S. P.	7 10 11.38	

O. Arg. N. 7755.

Feb.	3	. .	7 11 9.52	8.0

δ Geminorum.

Jan.	4	. .	7 11 45.55	
	31	. .	45.46	
Feb.	10	. .	45.54	

δ Geminorum—Continued.

1863.			h. m. s.	Mag.
Feb.	27	. .	7 11 45.54	
Mar.	2	. .	45.53	
	27	. .	45.57	
Aug.	10	. .	45.55	
Oct.	5	. .	45.58	
	31	. .	45.53	
Dec.	23	. .	45.50	
	25	. .	45.53	

30 Canis Majoris.

Feb.	23	. .	7 12 54.24	3.8
	25	. .	54.23	

Lacaille 2726.

Feb.	23	. .	7 13 24.59	
	25	. .	24.50	

(*) — 30° 32′.

Nov.	1	. .	7 14 8.38	8.0

Lacaille 2747.

Mar.	2	. .	7 15 13.91	

ι Geminorum.

Oct.	4	. .	7 17 1.72	

s Puppis.

Mar.	2	. .	7 17 39.45	4.5

B. A. C. 2455.

Oct.	31	. .	7 18 33.65	
Nov.	1	. .	33.56	

O. Arg. S. 6762.

Feb.	3	. .	7 18 40.72	6.0

Weisse VII, 551.

Dec.	25	. .	7 18 44.74	7.0

B. A. C. 2461.

Feb.	23	. .	7 19 22.04	4.5
	25	. .	22.08	

63 Geminorum.

Nov.	1	. .	7 19 25.64	

Lacaille 2797.

Mar.	2	. .	7 19 50.62	7.3

B. A. C. 2466.

Feb.	23	. .	7 20 20.45	
	25	.	20.59	

Lacaille 2814.

Mar.	2	. .	7 22 12.94	7.5
April	1	. .	13.06	

Lacaille 2813.

1863.		h. m. s.	Mag.
Oct.	31	7 22 19.33	7.0

B. Z. 276, 244.

Feb.	3	7 23 38.38	8.5

B. Z. 276, 245.

Feb.	3	7 23 38.61	8.0

B. A. C. 2484.

April	1	7 25 16.05	4.0

68 Geminorum.

Mar.	1	7 25 36.97	
Dec.	25	37.01	

α¹ Geminorum.

Mar.	9	7 25 39.29	
Aug.	10	39.32	
	17	39.20	
	19	39.35	

α² Geminorum.

Feb.	9	7 25 39.79	
	25	39.69	
Mar.	9	39.79	
May	28	39.66	
June	15	39.75	
Aug.	2	39.78	
	4	39.77	
	10	39.78	
	13	39.69	
	17	39.73	
	18	39.70	
	19	39.71	
	23	39.75	
Oct.	5	39.61	
	31	39.71	

Lacaille 2852.

April	1	7 28 8.25	

***g* Puppis.**

Feb.	23	7 28 42.73	5.0

Lacaille 2859.

April	1	7 28 56.55	

(*) — 25° 49′.

Feb.	9	7 29 13.88	

O. Arg. S. 7063.

Nov.	1	7 29 14.03	7.5

Lacaille 2864.

Feb.	23	7 29 46.42	

Lacaille 2873.

April	1	7 30 33.16	

Lacaille 2876.

1863.		h. m. s.	Mag.
Mar.	9	7 31 21.86	

α Canis Minoris.

Jan.	4	7 31 58.36	
Feb.	9	58.38	
	23	58.29	
April	1	58.31	
May	22	58.38	
	23	58.41	
June	9	58.39	
	15	58.35	
	16	58.36	
	23	58.29	
July	31	58.35	
Aug.	3	58.33	
	4	58.34	
	6	58.32	
	7	58.29	
	9	58.37	
	10	58.33	
	11	58.34	
	13	58.35	
	14	58.36	
	17	58.38	
	18	58.33	
	19	58.36	
	20	58.29	
	23	58.34	
Oct.	5	58.44	
Nov.	1	58.35	
Dec.	25	58.46	

Lacaille 2908.

April	1	7 34 54.27	

O. Arg. S. 7237.

April	1	7 34 56.98	

κ Geminorum.

Jan.	4	7 35 59.50	

O. Arg. S. 7286.

Nov.	1	7 36 34.61	7.0

β Geminorum.

Mar.	2	7 36 44.68	
	3	44.59	
May	22	44.74	
	23	44.69	
June	2	44.65	
	9	44.61	
	10	44.58	
	16	44.69	
July	31	44.68	
Aug.	2	44.69	
	3	44.68	
	4	44.58	
	10	44.73	
	11	44.70	
	13	44.65	
	14	44.72	
	17	44.65	
	18	44.64	
	19	44.66	
	20	44.75	
	23	44.72	
Oct.	5	(44.54)	

***g* Geminorum.**

Mar.	1	7 38 0.95	
Dec.	25	1.01	

O. Arg. S. 7376.

1863.		h. m. s.	Mag.
Nov.	1	7 39 35.25	8.0

Lacaille 2952.

April	1	7 39 57.08	

O. Arg. S. 7470.

Nov.	1	7 43 5.29	7.5

Lacaille 3006.

April	1	7 44 14.49	4.3:

ϕ Geminorum.

Feb.	2	7 44 55.44	
Dec.	25	55.39	

1 Cancri.

Nov.	2	7 49 2.31	5.8

Lacaille 3061.

Mar.	3	7 49 21.80	7.0

Lacaille 3078.

Mar.	3	7 51 44.43	6.5
April	1	44.48	

5 Cancri.

Nov.	1	7 53 31.30	6.0
	2	31.36	6.0

6 Cancri.

Jan.	5	7.54 54.81	
Mar.	9	54.88	
April	1	54.85	
	13	54.88	
Nov.	30	54.89	

ρ Argus.

Feb.	2	8 1 34.91	
April	26	35.04	

Lacaille 3184.

Nov.	30	8 6 14.86	7.0

Lacaille 3209.

Mar.	3	8 8 4.44	6.7
Nov.	2	4.45	7.0

Lacaille 3231.

Nov.	2	8 10 15.76	6.0

Lacaille 3229.

Jan.	5	8 10 19.03	6.8
Nov.	3	18.94	6.5

Lacaille 3248.

1863.		h. m. s.	Mag.
Mar.	3	8 11 58.11	6.5

B. A. C. 2790.

Jan.	5	8 12 16.59	

(*) — 29° 42′.

Nov.	30	8 13 19.60	8.0

(*) — 29° 43′.

Nov.	30	8 14 0.14	7.5

B. A. C. 2787.

April	10	8 14 7.01	

Lacaille 3267.

Nov.	2	8 14 27.22	6.5

δ¹ Cancri.

Jan.	5	8 15 20.62	5.5

Weisse VIII, 381.

Mar.	3	8 15 25.91	8.8

ω Puppis.

March	1	8.15 52.31	5.5
April	1	52.28	4.7
	3	52.30	

Lacaille 3290.

Nov.	2	8 17 9.05	7.0

Lacaille 3302.

Mar.	1	8 18 26.75	7.0
April	1	26.73	7.8

Lacaille 3312.

Mar.	3	8 19 34.69	6.8
Nov.	2	34.65	6.7

29 Cancri.

April	3	8 20 48.35	
Nov.	30	48.38	

B. A. C. 2843.

Mar.	1	8 21 38.92	6.3
Nov.	2	38.82	6.0

B. A. C. 2846.

April	1	8 21 57.18	6.6

Lacaille 3331.

Mar.	3	8 22 0.98	7.0

1863.		h.	m.	s.	Mag.
B. A. C. 2846.					
Jan.	5	8	22	57.17	6.0
θ Cancri.					
Mar.	1	8	23	36.59	
η Cancri.					
Jan.	5	8	24	36.47	4.7
	6			36.49	
Feb.	2			36.58	
Mar.	2			36.48	
April	1			36.51	
	3			36.49	
	10			36.42	
	26			36.47	
Nov.	1			36.41	
	2			36.46	
Lacaille 3361.					
Mar.	3	8	25	8.20	7.0
April	13			8.36	
Nov.	30			8.08	6.5
(*) + 10° 10′.					
Mar.	11	8	27	53.74	9.0
Lacaille 3388.					
Jan.	5	8	28	0.05	6.7
April	1			0.09	7.2
Lacaille 3399.					
Mar.	3	8	28	55.42	6.5
April	10			55.44	
c^1 Cancri.					
Jan.	6	8	29	30.29	6.0
Feb.	3			30.22	7.0
Mar.	11			30.22	6.8
Nov.	30			30.22	5.5
(*) — 30° 49′.					
Nov.	2	8	29	33.45	7.3
Lacaille 3419.					
Nov.	2	8	30	35.10	
B. A. C. 2910.					
Jan.	5	8	31	5.63	6.3
April	1			5.64	6.2
g Mali.					
Jan.	5	8	31	53.44	5.2
April	1			53.45	4.3
Lacaille 3434.					
Mar.	3	8	31	56.44	
April	10			56.48	
B. Z. 349, 8.					
Mar.	14	8	32	37.39	8.5

1863.		h.	m.	s.	Mag.
(*) — 33° 31′.					
Nov.	30	8	33	14.30	6.5
f Mali.					
April	1	8	33	53.98	4.0
	13			53.94	
Lacaille 3459.					
Mar.	3	8	34	16.68	7.0
April	10			16.87	
(*) — 33° 31′.					
Mar.	30	8	34	29.59	7.3
B. Z. 349, 10.					
Jan.	6	8	35	30.52	7.0
Mar.	11			30.41	7.7
Lacaille 3469.					
April	6	8	36	32.28	7.7
	10			32.27	
Nov.	2			32.10	
δ Cancri.					
Feb.	2	8	36	43.52	
	3			43.52	
Mar.	2			43.47	
April	25			43.41	
	26			43.48	
Lacaille 3474.					
Jan.	5	8	37	14.05	7.7
April	1			14.15	8.5
	13			14.12	7.7
(*) — 32° 41′.					
Nov.	30	8	37	57.32	7.5
a Mali.					
Nov.	30	8	37	58.00	5.0
ε Hydræ.					
Jan.	5	8	39	21.59	
	6			21.66	
Feb.	3			21.57	
Mar.	3			21.57	
	4			21.56	
	5			21.59	
	11			21.55	
April	3			21.56	
	6			21.61	
	25			21.54	
	26			21.62	
Lacaille 3509.					
April	1	8	40	10.19	6.8
	10			10.21	
O. Arg. S. 8978.					
Mar.	2	8	40	44.81	7.3
April	13			44.68	7.2

1863.		h.	m.	s.	Mag.
O. Arg. S. 8979.					
Mar.	2	8	40	46.02	7.0
April	13			46.21	7.0
Lacaille 3531.					
Nov.	30	8	42	12.78	6.5
Lacaille 3529.					
April	6	8	42	20.55	
	10			20.71	
Lacaille 3546.					
Mar.	3	8	43	40.95	7.2
	11			40.92	7.0
Nov.	2			40.95	6.0
(*) — 32° 22′.					
Mar.	2	8	44	4.54	8.3
	4			4.60	8.7
B. A. C. 3006.					
Mar.	2	8	44	10.20	4.0
	4			10.24	5.7
April	1			10.28	4.4
B. A. C. 3007.					
April	6	8	44	26.93	
	10			26.92	6.2
Lacaille 3564.					
Nov.	30	8	45	28.91	7.3
Lacaille 3574.					
Mar.	3	8	46	43.22	6.5
	11			43.22	6.0
Nov.	2			43.19	5.5
(*) — 32° 4′.					
Mar.	3	8	47	6.37	7.2
60 Cancri.					
April	25	8	48	16.69	
	26			16.74	
Lacaille 3582.					
April	1	8	48	25.57	7.5
	6			25.64	8.0
(*) — 34° 56′.					
Mar.	4	8	48	50.01	8.6
(*) — 35° 2′.					
Mar.	4	8	49	12.61	7.8
(*) — 32° 52′.					
Nov.	30	8	49	23.74	7.6

1863.		h.	m.	s.	Mag.
d Mali.					
April	10	8	49	31.35	
	13			31.37	4.5
Lacaille 3595.					
Mar.	3	8	49	44.19	7.0
	11			44.26	7.0
Nov.	30			44.22	7.0
o^2 Cancri.					
Nov.	2	8	49	45.88	5.5
Lacaille 3601.					
April	1	8	50	34.15	7.3
	6			34.16	8.0
α Cancri.					
Jan.	6	8	50	49.57	
Feb.	3			49.70	
Mar.	29			49.61	
April	25			49.62	
Lacaille 3607.					
April	10	8	51	32.95	
	13			32.90	7.8
Lacaille 3617.					
Mar.	3	8	52	59.95	7.0
	11			59.92	7.0
Nov.	30			60.05	
B. A. C. 3070.					
April	1	8	53	19.20	5.5
	6			19.21	5.7
(*) — 34° 50′.					
Mar.	4	8	53	39.97	9.0
Lacaille 3621.					
April	10	8	53	43.08	
	13			43.00	
B. A. C. 3082.					
April	1	8	55	7.17	5.3
	10			7.25	
Lacaille 3643.					
April	1	8	55	47.20	7.2
	6			47.22	7.0
Lacaille 3656.					
Mar.	3	8	57	4.97	7.2
	11			4.94	6.3
Nov.	30			4.88	6.0
σ^2 Ursæ Majoris.					
April	1	8	58	1.35	4.5
	13			1.36	4.8

Lacaille 3671.

1863.		h.	m.	s.	Mag.
April	6	8	59	8.67	5.8

κ Cancri.

Jan.	6	9	0	9.74	
	7			9.61	
Feb.	3			9.71	5.0
Mar.	2			9.65	
	3			9.69	5.5
April	10			9.66	
	25			9.69	
	26			9.66	
Nov.	2			9.71	
	30			9.67	

Lacaille 3684.

Mar.	11	9	1	33.09	7.0
April	13			33.28	7.0

B. A. C. 3121.

April	10	9	1	54.34	4.0

B. Z. 347, 31.

Jan.	6	9	2	10.12	7.5

Lacaille 3690.

April	10	9	2	31.56	7.0

B. A. C. 3127.

April	10	9	3	37.05	
	13			37.05	7.0

ε Mali.

Jan.	7	9	4	0.36	
April	1			0.56	4.4

Lacaille 3704.

Mar.	11	9	4	20.84	6.7
April	3			20.91	7.0
Nov.	30			20.67	

Lacaille 3716.

April	13	9	6	15.52	6.6

Lacaille 3725.

Mar.	11	9	7	1.37	6.7
April	1			1.54	7.0

Lacaille 3726.

April	6	9	7	22.15	5.5

B. Z. 347, 39.

Jan.	6	9	7	56.14	7.8

Laçaille 3733.

Mar.	3	9	8	30.33	6.5
April	10			30.47	

Lacaille 3739.

1863.		h.	m.	s.	Mag.
Jan.	7	9	9	5.97	
April	13			6.25	7.7

Lacaille 3750.

Mar.	11	9	9	45.41	6.3
April	1			45.69	7.0

83 Cancri.

Jan.	6	9	11	9.82	
Feb.	3			9.77	
April	6			9.76	5.4
	13			9.72	6.5
Nov.	2			9.77	
	30			9.79	

B. A. C. 3174.

Mar.	3	9	11	27.84	5.0

(*) — 33° 31′.

Mar.	11	9	12	55.59	7.0

B. A. C. 3190.

Mar.	11	9	13	59.48	5.7
April	1			59.72	6.5

Lacaille 3788.

Jan.	7	9	14	43.60	
April	6			43.66	7.5

Lacaille 3802.

Nov.	30	9	16	47.22	7.0

1 (Hev.) Draconis.

Mar.	3	9	16	47.99	5.0
April	1			48.63	
	10			48.13	

B. A. C. 3207.

Jan.	7	9	17	8.61	
April	6			8.78	4.4

Lacaille 3807.

Mar.	11	9	17	46.91	6.2
April	13			47.04	7.2

α Hydræ.

Jan.	7	9	20	42.52	
April	1			42.50	
	6			42.48	
	13			42.53	
	26			42.49	
June	16			42.44	
July	22			(42.62)	
Nov.	3			42.41	

Lacaille 3834.

Mar.	11	9	20	43.69	6.5

ω Leonis.

Mar.	3	9	20	57.46	

(*) — 33° 11′.

1863.		h.	m.	s.	Mag.
Mar.	11	9	21	22.03	6.5

d Ursæ Majoris.

Jan.	7	9	22	1.99	

Lacaille 3843.

April	13	9	22	23.54	7.2
	26			23.60	

θ Ursæ Majoris.

July	22	9	23	28.46	

B. A. C. 3243.

April	1	9	23	28.46	5.6
	6			28.48	7.0

Lacaille 3857.

April	13	9	23	30.42	7.4
	26			30.56	

B. A. C. 3248.

April	1	9	23	41.81	6.7
	6			41.85	5.2

ξ Leonis.

Nov.	3	9	24	23.66	

λ Leonis.

April	26	9	24	27.07	
Nov.	30			27.07	

Lacaille 3889.

Mar.	3	9	25	42.63	6.0

Lacaille 3892.

Jan.	7	9	26	10.66	
April	6			10.81	6.8

Lacaille 3903.

April	13	9	27	29.55	6.0

Lacaille 3908.

Mar.	11	9	27	58.45	6.8
April	1			58.66	8.5
Nov.	30			58.46	7.0

O. Arg. S. 9856.

Mar.	11	9	28	0.59	6.8

Lacaille 3918.

Mar.	3	9	29	22.68	6.2

10 Leonis.

Feb.	3	9	29	49.05	5.0
Mar.	31			49.00	
April	10			49.04	5.2

Lacaille 3923.

1863.		h.	m.	s.	Mag.
Jan.	7	9	30	15.33	
April	6			15.41	6.3

Lacaille 3928.

April	13	9	30	42.59	5.7
	26			42.60	

B. A. C. 3296.

Mar.	11	9	31	8.38	5.5
April	1			8.53	5.5

Lacaille 3945.

April	25	9	31	41.46	

ο Leonis.

Feb.	3	9	33	40.52	4.0
Mar.	31			40.55	
April	10			40.50	4.0
	27			40.50	
Nov.	4			40.52	
	30			40.50	
Dec.	1			40.51	

Lacaille 3967.

Mar.	3	9	34	11.44	7.0
	11			11.36	7.0
April	25			11.51	6.5

Lacaille 3976.

April	6	9	35	44.82	6.5

(*) — 34° 58′.

Mar.	3	9	36	35.31	7.5

Lacaille 3983.

Mar.	3	9	36	47.12	6.7

Lacaille 3984.

Mar.	11	9	36	51.46	7.0
April	1			51.66	
	25			51.62	6.5

ε Leonis.

Jan.	7	9	37	53.94	
Mar.	31			53.85	
April	10			53.85	
	27			53.84	
Nov.	2			53.92	
	4			52.81	
	30			(53.70)	

Lacaille 4002.

April	1	9	40	5.54	7.3
	6			5.50	7.7

Lacaille 4007.

Mar.	3	9	40	14.82	6.8
	11			14.76	6.2

Lacaille 4031.

1863.	h. m. s.	Mag.
Mar. 11 . .	9 42 47.06	
April 1 . .	47.10	

4 Sextantis.

Dec. 29 . .	9 43 12.84	

Weisse IX, 929.

April 25 . .	9 43 14.14	8.3

μ Leonis.

April 6 . .	9 44 47.63	4.0
13 . .	47.69	4.0
Nov. 3 . .	47.72	
4 . .	47.68	
Dec. 1 . .	47.68	
29 . .	47.64	

Lacaille 4052.

Mar. 11 . .	9 45 50.31	
April 1 . .	50.42	

(*) + 15° 25′.

April 25 . .	9 45 53.61	8.7

(* 114) W. + 14° 58′.

Mar. 31 . .	9 46 1.01	9.5

Rumker 2988.

April 25 . .	9 46 11.11	8.0

B. A. C. 3385.

April 27 . .	9 46 42.05	

Lacaille 4058.

April 18 . .	9 47 47.45	8.0

Lacaille 4065.

Mar. 11 . .	9 48 30.96	
April 1 . .	31.16	

B. Z. 349, 81.

Mar. 31 . .	9 48 51.88	8.0

Lacaille 4074.

April 6 . .	9 50 25.72	6.5
13 . .	25.68	6.2

B. A. C. 3405.

April 25 . .	9 50 28.87	5.5

Lacaille 4076.

Dec. 29 . .	9 50 34.83	6.6

ν Leonis.

May 3 . .	9 50 41.35	
Nov. 3 . .	41.31	
Dec. 1 . .	41.35	

Lacaille 4082.

1863.	h. m. s.	Mag.
Mar. 11 . .	9 50 56.02	6.7
April 1 . .	56.17	

Lacaille 4089.

April 6 . .	9 52 27.08	8.0
13 . .	27.03	6.7

π Leonis.

Jan. 7 . .	9 52 48.67	
Mar. 3 . .	48.75	
11 . .	48.70	
31 . .	48.79	5.0
April 1 . .	48.76	
Nov. 3 . .	48.75	
4 . .	48.78	
Dec. 29 . .	48.85	

Lacaille 4106, (1st star.)

April 6 . .	9 55 33.01	9.0

Lacaille 4106, (2d star.)

April 6 . .	9 55 33.99	9.5

Lacaille 4111.

Mar. 3 . .	9 55 53.97	7.0
April 13 . .	54.01	
25 . .	54.00	6.0

Lacaille 4120.

Mar. 31 . .	9 57 14.02	6.5

(*) + 12° 38′.

April 13 . .	9 58 26.40	

Lacaille 4132.

April 27 . .	9 58 27.95	

Lacaille 4134.

April 13 . .	9 58 50.79	6.2
27 . .	50.84	

B. Z. 406, 63.

Mar. 11 . .	9 59 6.18	
31 . .	6.17	7.5

B. Z. 406, 64.

Mar. 11 . .	9 59 8.90	9.2

Lacaille 4142.

April 25 . .	9 59 23.46	6.7

A Leonis.

Mar. 3 . .	10 0 28.34	

α Leonis.

1863.	h. m. s.	Mag.
Feb. 4 . .	10 0 54.77	
April 1 . .	54.81	
8 . .	54.78	
13 . .	54.73	
14 . .	54.84	
June 22 . .	54.75	
July 23 . .	54.86	
24 . .	54.83	
Sept. 4 . .	54.85	
Oct. 2 . .	54.81	
4 . .	54.79	
Nov. 4 . .	54.77	

Lacaille 4162.

April 9 . .	10 2 15.41	7.0
27 . .	15.38	

B. A. C. 3466.

April 25 . .	10 2 31.59	6.0

(*) — 32° 10′.

Mar. 31 . .	10 2 39.38	8.5

Lacaille 4165.

Mar. 31 . .	10 3 20.36	7.0
April 1 . .	20.41	

B. Z. 406, 68.

Mar. 11 . .	10 3 43.44	8.3

Lalande 19854.

Mar. 3 . .	10 5 20.59	8.0

Lacaille 4185.

April 9 . .	10 5 36.78	6.5
27 . .	36.79	

Lacaille 4183.

April 13 . .	10 5 39.97	

Lacaille 4186.

Mar. 4 . .	10 5 56.01	6.0

Lacaille 4190.

Mar. 11 . .	10 6 26.44	7.0
April 1 . .	26.47	

Lacaille 4192.

Mar. 31 . .	10 6 34.88	7.0

(*) — 39° 58′.

Mar. 4 . .	10 6 56.90	7.0

22 Leonis Minoris.

Mar. 3 . .	10 7 3.51	6.0

B. A. C. 3497.

1863.	h. m. s.	Mag.
April 9 . .	10 7 48.77	6.0

32 Ursæ Majoris.

April 6 . .	10 7 49.23	
10 . .	49.14	
27 . .	48.96	

B. A. C. 3498.

April 9 . .	10 7 58.57	6.5

B. Z. 454, 41.

April 25 . .	10 8 12.40	

Radcliffe 2466.

April 25 . .	10 8 13.39	8.5

Lacaille 4218.

Mar. 11 . .	10 9 41.52	
April 1 . .	41.58	

B. Z. 501, 29.

Mar. 3 .	10 10 34.15	9.0

B. A. C. 3521.

April 1 . .	10 11 42.92	
6 . .	42.86	6.0

γ^1 Leonis.

Mar. 4 . .	10 12 14.96	
11 . .	14.91	
April 9 . .	14.95	
10 . .	14.92	
11 . .	14.98	
14 . .	14.96	
May 11 . .	14.91	
June 22 . .	15.03	
Nov. 4 . .	14.95	

γ^2 Leonis.

April 9 . .	10 12 15.35	
10 . .	15.25	
14 . .	15.40	

Lacaille 4245.

April 13 . .	10 12 56.91	6.5
27 . .	56.99	

(*) — 3° 37′.

April 25 . .	10 13 2.73	8.0

Lacaille 4257.

Mar. 3 . .	10 14 49.10	6.5
4 . .	49.02	6.8
April 1 . .	49.10	6.6

B. Z. 501, 35.

April 11 . .	10 15 3.98	

Lacaille 4266.

1863.	h.	m.	s.	Mag.
April 6 . .	10	15	56.58	
27 . .			56.53	

B. A. C. 3554.

Mar. 11 . .	10	16	49.94	6.0

B. A. C. 3557.

April 9 . .	10	17	21.78	5.0
13 . .			21.69	5.3
25 . .			21.66	5.2

γ Antliæ.

Mar. 3 . .	10	17	29.57	7.0
April 6 . .			29.65	

44 Leonis.

April 1 . .	10	17	52.45	5.6

Lacaille 4286.

April 27 . .	10	18	56.85	6.2

35 Ursæ Majoris.

April 11 . .	10	19	54.90	

Lacaille 4295.

April 9 . .	10	20	17.89	6.5
13 . .			17.77	
25 . .			17.77	6.5

α Antliæ.

Mar. 3 . .	10	20	45.00	4.5
4 . .			44.88	4.3

Lacaille 4307.

April 13 . .	10	22	54.34	
25 . .			54.37	

B. A. C. 3596.

April 6 . .	10	23	1.21	5.2
27 . .			1.27	5.6

Lacaille 4317.

Mar. 3 . .	10	24	17.94	6.7

Lacaille 4326.

April 9 . .	10	25	10.92	6.7
13 . .			10.86	7.0

Lacaille 4324.

April 6 . .	10	25	17.75	6.2

ρ Leonis.

Feb. 4 . .	10	25	26.20	
April 1 . .			26.27	
27 . .			26.20	

B. Z. 457, 12.

1863.	h.	m.	s.	Mag.
April 11 . .	10	26	0.54	

Lacaille 4340.

Mar. 3 . .	10	27	17.75	7.0
11 . .			17.59	6.5

Lacaille 4345.

April 8 . .	10	27	20.37	6.5
13 . .			20.27	7.5
25 . .			20.18	6.2

Lacaille 4349.

April 9 . .	10	28	20.36	6.8

Lacaille 4360.

April 6 . .	10	29	28.77	7.0

Lacaille 4363.

Dec. 29 . .	10	30	2.90	

Lacaille 4364.

Mar. 11 . .	10	30	8.30	5.8
April 1 . .			8.32	7.0

Lacaille 4374.

April 9 . .	10	31	20.42	6.7
13 . .			20.33	7.5
25 . .			20.36	6.2

38 Ursæ Majoris.

April 11 . .	10	32	20.97	

Lacaille 4382.

Mar. 3 . .	10	32	31.14	7.0
April 1 . .			31.09	7.3

Lacaille 4387.

April 8 . .	10	32	55.95	
May 1 . .			55.97	

Lacaille 4389.

April 9 . .	10	33	26.24	6.5
13 . .			26.23	7.5
25 . .			26.17	6.5

Lacaille 4393.

March 11 . .	10	34	9.71	7.0
April 27 . .			9.81	8.3

Lacaille 4399.

April 8 . .	10	34	28.46	

B. Z. 499, 117.

April 18 . .	10	34	35.39	9.0

Lacaille 4407.

1863.	h.	m.	s.	Mag.
April 8 . .	10	35	6.86	

Lacaille 4406.

Mar. 3 . .	10	35	13.82	7.0
April 1 . .			13.78	7.7

34 Sextantis.

April 11 . .	10	35	23.62	
Dec. 29 . .			23.66	

B. A. C. 3677.

April 9 . .	10	36	14.32	5.5
13 . .			14.16	5.0
25 .			14.11	6.0

(*) + 36° 22′.

April 18 . .	10	36	47.94	9.5

B. Z. 491, 129.

April 18 . .	10	38	7.72	9.2

Lacaille 4438.

April 9 . .	10	38	17.86	6.7
13 . .			17.98	8.3
25 . .			17.98	7.0

B. Z. 491, 130.

April 18 . .	10	38	19.84	8.5

37 Sextantis.

Dec. 29 . .	10	38	48.16	

***k* Leonis.**

April 11 . .	10	39	0.16	

Lacaille 4450.

Mar. 11 . .	10	39	33.60	6.0

O. Arg. S. 10887.

April 9 . .	10	41	0.32	6.7
25 .			0.24	6.5

Lacaille 4463.

April 9 . .	10	41	40.94	5.7
13 . .			40.84	5.0
25 . .			40.77	6.0

***l* Leonis.**

Mar. 3 . .	10	41	53.83	
4 . .			53.75	
5 . .			53.69	
April 6 .			53.80	
8 . .			53.80	
11 . .			53.77	
18 . .			53.72	
Dec. 29 . .			53.74	

Lacaille 4481.

1863.	h.	m.	s.	Mag.
Mar. 11 . .	10	43	9.52	6.5
April 27 . .			9.75	8.0

Σ Cat. Gen. 1248.

April 18 . .	10	43	27.31	8.5

Lacaille 4488.

April 9 . .	10	43	55.71	7.0
13 . .			55.60	8.0
25 . .			55.57	7.0

Weisse X, 803.

Mar. 3 . .	10	44	37.27	8.0

44 Ursæ Majoris.

April 11 . .	10	45	4.30	

Lacaille 4498.

April 9 . .	10	46	31.03	6.0
13 . .			30.92	6.8
25 . .			30.94	6.5

Lacaille 4503.

April 8 . .	10	46	42.80	

Lacaille 4505.

Dec. 29 . .	10	47	16.32	7.6

Lacaille 4508.

Mar. 11 . .	10	47	29.76	7.0

55 Leonis.

Dec. 29 . .	10	48	30.15	

(*) — 31° 4′.

April 9 . .	10	48	33.96	8.3

Lalande 21016.

April 18 . .	10	48	47.16	7.2

Lacaille 4519.

April 9 . .	10	49	14.47	7.0
13 . .			14.47	7.3
25 . .			14.45	7.0

Lalande 21025.

April 21 . .	10	49	15.93	8.5

O. Arg. N. 11279.

Mar. 3 . .	10	49	40.35	7.5
28 . .			40.53	8.5

B. Z. 353, 31.

April 18 . .	10	49	40.95	

(*) — 41° 18′.

1863.		h.	m.	s.	Mag.
Mar.	11	10	50	18.04	7.5
April	27			18.52	

B. Z. 499, 133.

April	21	10	51	13.55	9.0

Lacaille 4535.

Mar.	11	10	51	35.30	7.0

(*) — 34° 9′.

April	13	10	52	29.92	7.7

Lacaille 4539.

May	11	10	52	39.50	

O. Arg. N. 11325.

April	11	10	52	57.71	

c Leonis.

Mar.	4	10	53	29.27	
	5			29.25	

Lacaille 4553.

Mar.	11	10	53	52.46	

B. A. C. 3774.

April	9	10	54	2.32	6.0
	25			2.33	6.5

α Ursæ Majóris.

April	27	10	55	3.25	
May	1			3.25	
July	22			3.42	
Sept.	21			3.21	
Oct.	2			3.54	
	8			3.42	
Dec.	29			3.31	

B. Z. 499, 138.

Mar.	28	10	56	18.74	9.0
April	21			19.03	9.0

Lacaille 4570.

Mar.	3	10	56	31.94	7.0

B. A. C. 3783.

April	9	10	56	36.14	6.3

χ Leonis.

Feb.	7	10	57	47.61	
Mar.	3			47.70	
	4			47.69	
	11			47.71	
April	8			47.61	
	11			47.64	
	13			47.64	4.3
	21			(47.78)	
	25			47.65	
May	1			47.66	
	11			47.57	
Dec.	29			47.65	

ρ³ Leonis.

1863.		h.	m.	s.	Mag.
Mar.	4	10	59	45.67	5.7
	5			45.66	

Weisse X, 1075.

Mar.	28	10	59	54.29	8.0

(*) + 10° 57′.

Mar.	28	11	0	4.73	9.0

Lacaille 4599.

April	9	11	0	27.65	6.3
	13			27.66	6.0
	25			27.65	6.5

(*) + 10° 58′.

Mar.	28	11	0	30.00	9.5

(*) + 10° 57′.

Mar.	28	11	0	40.40	9.0

B. Z. 499, 144.

April	18	11	0	52.54	8.3
	21			52.74	9.0

Lacaille 4609.

May	11	11	1	30.75	6.0

ψ Ursæ Majoris.

April	11	11	1	46.73	

Lacaille 4614.

May	11	11	1	54.47	

B. Z. 499, 147.

April	18	11	2	31.42	7.8
	21			31.67	8.0

Lacaille 4633.

April	9	11	3	51.97	6.5
	13			52.02	7.0
	25			51.92	6.5

(*) + 0° 40′.

Dec.	3	11	4	10.28	

B. Z. 499, 148.

Mar.	11	11	4	23.35	

Lacaille 4642.

April	25	11	5	30.45	6.0
	27			30.41	7.0

Lacaille 4646.

April	1	11	6	22.41	
May	11			22.32	7.2

ρ⁵ Leonis.

1863.		h.	m.	s.	Mag.
April	11	11	6	35.53	

δ Leonis.

Mar.	5	11	6	39.44	
	28			39.47	
April	9			39.49	
	27			39.48	
June	23			39.48	
July	20			39.50	
	24			39.52	
Oct.	2			39.51	
	4			(39.39)	
	8			39.44	
	11			39.48	
	16			39.43	
	19			39.48	
	20			39.49	
Dec.	4			39.52	

B. A. C. 3837.

April	18	11	6	45.18	6.8
	21			45.51	6.5

Lacaille 4655.

May	1	11	7	46.08	
	11			46.02	

Lacaille 4665.

April	9	11	8	19.15	6.3
	13			19.13	6.5
	25			19.13	6.3

Weisse XI, 137.

April	11	11	9	26.09	8.0

φ Leonis.

April	1	11	9	32.73	4.5
	11			32.59	

B. Z. 358, 8.

April	21	11	10	23.31	8.0

Lacaille 4687.

April	25	11	10	52.47	6.5
	27			52.44	7.7

B. Z. 358, 9.

April	21	11	11	11.69	7.0

δ Crateris.

Mar.	28	11	12	20.56	
April	1			20.69	
	9			20.62	
	11			20.60	
	13			20.67	3.2
	18			20.62	
May	1			20.67	
	11			20.59	3.2
	15			20.57	
Dec.	3			20.59	
	4			20.70	

Lacaille 4709.

1863.		h.	m.	s.	Mag.
April	25	11	13	42.80	7.0
	27			42.83	8.0

σ Leonis.

Dec.	3	11	13	55.11	

Lacaille 4713.

April	9	11	14	23.53	7.0
May	1			23.62	

Weisse XI, 234.

April	21	11	14	25.75	7.8

Weisse XI, 258.

April	21	11	15	50.91	8.3

Weisse XI, 261.

Mar.	28	11	16	1.24	9.2
April	18			1.36	9.2

Lacaille 4725.

May	11	11	16	12.82	8.2
	15			12.90	

ι Leonis.

April	11	11	16	37.48	
Dec.	3			37.58	

Weisse XI, 284.

Mar.	28	11	17	33.59	8.3
April	18			33.68	8.0
Dec.	4			33.56	7.5

Lacaille 4735.

April	9	11	17	42.38	7.0
	13			42.38	8.0
	25			42.41	7.0

B. Z. 496, 49.

April	21	11	19	6.60	

83 Leonis.

April	11	11	19	39.96	

Gr. C. 954.

April	11	11	19	40.93	

Lacaille 4749.

May	11	11	20	41.91	6.7
	15			41.93	

τ Leonis.

Feb.	6	11	20	44.26	
April	13			44.27	4.8
	18			44.20	5.5
	21			(44.39)	
Dec.	3			44.32	
	4			44.16	5.0

Weisse XI, 349.

1863.		h.	m.	s.	Mag.
April	18	11	20	45.17	7.5
	21			45.35	7.5
Dec.	4			45.08	7.8

Lacaille 4753.

April	9	11	21	8.44	6.0
	25			8.53	6.0

(*) + 3° 54′.

Mar.	28	11	22	47.31	8.2

58 Ursæ Majoris.

Mar.	11	11	22	55.83	7.0

λ Draconis.

April	27	11	23	2.77	3.8
May	1			2.88	
	15			2.88	

ε Leonis.

Feb.	6	11	23	9.68	4.5
Mar.	5			9.74	

Lacaille 4761.

May	11	11	23	23.56	6.3

Lacaille 4766.

April	9	11	23	55.08	6.5
	25			55.15	6.7

B. A. C. 3917.

Mar.	28	11	24	11.37	7.8
April	18			11.40	7.2
Dec.	4			11.34	7.0

B. A. C. 3921.

May	11	11	25	19.97	6.0

B. A. C. 3922.

May	11	11	25	20.42	6.0

Weisse XI, 429.

Mar.	28	11	25	26.12	8.5
April	18			26.09	8.5
	21			26.33	8.5
	30			26.14	8.5

Weisse XI, 438.

Mar.	28	11	25	51.24	8.3
April	21			51.47	
	30			51.25	8.0

B. A. C. 3928.

April	25	11	26	7.41	4.5
May	15			7.30	4.3

Weisse XI, 446.

1863.		h.	m.	s.	Mag.
Mar.	11	11	26	18.50	8.0
April	11			18.46	8.0

B. A. C. 3937.

April	21	11	28	55.57	6.8

(*) 115 W. + 1° 28′.

Mar.	28	11	29	37.35	9.5
April	18			37.44	9.5

Lacaille 4802.

April	9	11	29	40.88	6.5
	25			40.95	6.5

ν Leonis.

Feb.	6	11	29	46.77	4.7
Mar.	5			46.97	
	11			46.92	
April	30			46.89	
May	1			46.87	
	11			46.85	4.3
	15			46.90	5.5
	19			46.84	
Dec.	3			46.88	
	4			46.89	

B. Z. 526, 102.

April	21	11	29	52.14	8.0

59 Ursæ Majoris.

April	11	11	30	52.26	

Lacaille 4825.

April	9	11	31	54.16	7.0

Weisse XI, 553.

April	18	11	32	5.96	9.3

Lacaille 4833.

April	25	11	32	48.67	6.7
May	11			48.50	8.5

B. A. C. 3962.

Mar.	28	11	33	13.36	8.0
April	11			13.43	
	18			13.44	7.0
	30			13.39	7.8
May	19			13.39	7.3
Dec.	4			13.45	6.5

(*) + 1° 44′.

Mar.	23	11	34	17.08	9.2

Lacaille 4849.

April	9	11	34	25.60	6.7
May	15			25.84	7.7

(*) + 1° 44′.

1863.		h.	m.	s.	Mag.
Mar.	28	11	34	31.16	9.0

B. A. C. 3969.

April	25	11	34	45.06	5.7
May	11			44.89	5.2

Weisse XI, 624.

April	11	11	36	9.77	7.5
	18			9.76	7.5
	21			9.87	7.5
	30			9.71	8.0
May	19			9.71	8.0
Dec.	4			9.67	

Lacaille 4867.

May	11	11	36	58.16	7.3
	15			58.29	7.1

Weisse XI, 652.

April	21	11	37	43.20	9.3

Weisse XI, 662.

April	11	11	38	12.40	7.0
	18			12.32	8.0
	21			12.43	7.3

B. Z. 359, 32.

April	30	11	38	14.43	7.0

Lacaille 4877.

April	9	11	38	27.51	7.0
	25			27.64	6.5

ν Virginis.

Dec.	3	11	38	39.75	

B. A. C. 3988.

April	9	11	39	50.61	4.0
	25			50.76	5.5

Lacaille 4890.

April	27	11	40	16.06	7.8

Lalande 22308.

April	11	11	41	46.18	8.0

B. Z. 456, 121.

April	30	11	41	48.28	7.3

β Leonis.

Mar.	28	11	41	54.96	
April	11			54.97	
	18			54.95	
	27			55.03	
May	15			54.94	
June	23			55.06	
July	23			54.98	

β Leonis—Continued.

1863.		h.	m.	s.	Mag.
Aug.	5			55.04	
	8			55.01	
	10			55.00	
	12			54.98	
	15			54.95	
Oct.	11			55.03	
	19			55.01	
	20			54.97	
	27			55.01	
	28			54.99	
Dec.	3			54.93	
	4			54.89	

B. A. C. 4003.

May	11	11	43	33.12	6.2

Lacaille 4906.

April	9	11	43	40.18	6.5
	25			40.29	6.3

B. A. C. 4006.

April	30	11	43	52.89	6.5
Dec.	4			52.76	

Lacaille 4909.

May	11	11	44	0.62	7.0

Carrington 1762.

April	21	11	44	34.81	8.3
May	19			33.80	8.3

B. A. C. 4015.

April	25	11	45	50.72	5.0

γ Ursæ Majoris.

May	2	11	46	27.05	

(*) + 1° 6′.

Mar.	28	11	46	54.56	9.5
April	9			54.63	9.5

B. A. C. 4025

April	18	11	47	40.70	7.3

Lacaille 4939.

May	11	11	48	23.84	7.0

B. A. C. 4034.

April	25	11	48	49.15	5.8

B. A. C. 4042.

May	1	11	51	46.30	6.0
	11			46.24	6.0

Weisse XI, 895.

April	9	11	52	24.26	7.5
	30			24.20	7.0
May	19			24.23	8.0

b Virginis.

1863.			h.	m.	s.	Mag.
April	11	. .	11	52	46.63	
May	2	. .			46.65	

Weisse XI, 921.

Mar.	28	. .	11	53	51.06	8.2
April	11	. .			50.99	8.0
May	19	. .			51.02	8.0

Lacaille 4976.

April	25	. .	11	54	16.10	6.5
May	1	. .			16.09	7.5

Lacaille 4979.

April	9	. .	11	54	38.90	6.5
May	11	. .			38.92	6.8

67 Ursæ Majoris.

May	2	. .	11	54	59.59	

Lacaille 4993.

April	18	. .	11	56	30.59	6.0

B. A. C. 4070.

May	15	. .	11	57	37.37	

Weisse XI, 980.

Mar.	28	. .	11	57	45.56	8.0
April	9	. .			45.46	8.0
	30	. .			45.58	

o Virginis.

Jan.	11	. .	11	58	4.56	
Feb.	6	. .			4.60	
Mar.	28	. .			4.70	
April	9	. .			4.56	4.5
	21	. .			4.56	
	25	. .			4.64	4.5
	30	. .			4.65	
May	1	. .			4.61	4.2
	2	. .			4.60	

Weisse XI, 1011.

April	18	. .	12	0	1.43	7.3
	21	. .			1.48	7.5

Weisse XI, 1030.

Mar.	28	. .	12	1	2.03	7.7
May	19	. .			1.92	8.0

B. A. C. 4088.

April	29	. .	12	1	7.19	6.5

Weisse XI, 1033.

Mar.	28	. .	12	1	17.57	8.0

e Corvi.

1863.			h.	m.	s.	Mag.
Jan.	11	. .	12	2	55.81	
April	10	. .			55.82	
May	2	. .			55.75	
	27	. .			55.76	

B. A. C. 4098.

April	9	. .	12	3	18.66	6.0

Weisse XII, 49.

April	11	. .	12	4	22.18	8.0
	18	. .			22.11	8.7
May	19	. .			22.06	8.5

4 Draconis.

Feb.	6	. .	12	5	35.51	
May	1	. .			35.45	4.7
	11	. .			35.41	
	15	. .			35.65	

Lacaille 5066.

Mar.	28	. .	12	6	21.08	6.0
April	21	. .			21.22	6.0
	25	. .			21.13	6.5

δ Ursæ Majoris.

May	2	. .	12	8	28.82	4.5

Weisse XII, 144.

April	11	. .	12	10	18.03	8.0
	30	. .			17.89	7.5
May	19	. .			17.91	8.2

Lacaille 5088.

April	9	. .	12	10	29.12	5.5
	21	. .			29.27	6.0
May	15	. .			29.27	7.7

Lacaille 5097.

Mar.	28	. .	12	12	13.82	6.5

B. A. C. 4150.

April	18	.	12	12	42.35	6.0

η Virginis.

Jan.	11	. .	12	12	44.68	
April	30	. .			44.67	
May	1	. .			44.67	4.2
	11	. .			44.61	3.7
	19	.			44.63	
July	21	. .			(44.89)	
Aug.	11	. .			44.69	
Nov.	30	. .			44.63	
Dec.	4	. .			44.67	

Lacaille 5102.

April	21	. .	12	12	46.20	7.3
May	15	. .			46.24	

Weisse XII, 193.

April	11	. .	12	12	47.24	8.0

c Virginis.

1863.			h.	m.	s.	Mag.
May	2	. .	12	13	14.30	

Lacaille 5109.

April	9	. .	12	13	43.43	6.5

B. A. C. 4165.

Sept.	25	S. P.	12	14	19.68	
Oct.	17	S. P.			19.64	

Lacaille 5117.

April	27	. .	12	14	52.72	

Lacaille 5125.

May	1	. .	12	15	43.26	7.2

Lacaille 5126.

April	21	. .	12	15	52.77	7.0
May	15	. .			52.70	

Weisse XII, 252.

May	19	. .	12	15	57.14	9.5

6 Corvi.

May	1	. .	12	16	4.27	5.8

B. A. C. 4175.

April	9	. .	12	16	22.06	5.5

Weisse XII, 261.

Jan.	11	. .	12	16	36.08	8.5
Mar.	8	. .			36.12	9.0
April	30	. .			36.13	8.8

Lalande 23219.

May	19	. .	12	17	33.65	9.0

Lacaille 5144.

May	11	. .	12	17	58.99	5.5

κ^2 Centauri.

April	21	. .	12	17	59.78	5.8
May	15	. .			59.76	5.7

B. A. C. 4192.

April	9	. .	12	19	29.43	5.7
May	1	. .			29.59	6.2

Lalande 23270.

May	16	. .	12	19	35.65	8.3

Lacaille 5159.

May	27	. .	12	20	6.23	

73 Ursæ Majoris.

1863.			h.	m.	s.	Mag.
April	11	. .	12	20	54.69	
May	2	. .			54.63	

B. A. C. 4202.

April	21	. .	12	20	56.53	5.2
May	15	. .			56.53	6.0

Weisse XII, 345.

Jan.	11	. .	12	21	11.85	9.0
Mar.	28	. .			11.96	9.2
May	19	. .			11.89	9.0

Lacaille 5176.

April	9	. .	12	22	40.15	7.0
	27	. .			40.27	
May	1	. .			40.26	8.3

Lacaille 5188.

May	27	. .	12	23	44.91	

O. Arg. S. 12219.

May	11	. .	12	24	13.93	6.5

Weisse XII, 402.

Mar.	28	. .	12	24	26.91	6.5
April	11	. .			26.89	7.3
May	16	. .			26.91	8.0
	19	. .			26.88	7.0

Lacaille 5189.

April	21	. .	12	24	29.08	6.5
May	15	. .			29.08	

Lacaille 5193.

April	9	. .	12	25	10.32	6.7

q Virginis.

Jan.	11	. .	12	26	33.39	
April	30	. .			33.39	6.0
May	27	. .			33.34	6.8
	28	. .			33.37	

β Corvi.

Feb.	6	. .	12	27	2.43	
April	9	. .			2.38	
	11	. .			2.39	
	18	. .			2.44	
May	11	. .			2.32	
	16	. .			2.33	

κ Draconis.

April	27	. .	12	27	28.99	3.7
May	1	. .			29.08	3.6
	2	. .			29.16	

Weisse XII, 461.

Mar.	28	. .	12	28	3.05	9.0
April	30	. .			3.07	9.
May	19	. .			3.00	8.8

B. A. C. 4943.

1863.		h.	m.	s.	Mag.
April	21	12	28	14.28	5.0
May	15			14.35	6.0

B. Z. 409, 45.

May	19	12	30	11.15	8.0

B. A. C. 4253.

May	11	12	30	17.34	5.3

WEISSE XII, 497.

April	11	12	30	18.69	8.5
	18			18.70	7.5

LACAILLE 5226.

April	21	12	30	53.23	6.7
May	15			53.30	

WEISSE XII, 519.

Mar.	28	12	31	32.25	7.3
May	18			32.26	8.2

(*) + 14° 34′.

Mar.	28	12	31	48.58	8.5
May	16			48.60	9.0

WEISSE XII, 526.

Mar.	28	12	31	57.88	9.0
May	16			57.96	9.3

LACAILLE 5230.

May	1	12	31	58.16	7.8

χ VIRGINIS.

Jan.	11	12	32	1.41	
April	11			1.39	(7.0)
	30			1.35	
May	27			1.37	4.4
	28			1.40	5.2

LACAILLE 5232.

May	1	12	32	21.81	8.0

LACAILLE 5239.

May	11	12	33	25.87	8.5

LACAILLE 5238.

April	21	12	33	31.49	7.0

LACAILLE 5256.

May	27	12	35	48.14	7.4

LACAILLE 5261.

April	21	12	36	26.45	7.0
May	15			26.49	

(*) + 14° 14′.

1863.		h.	m.	s.	Mag.
May	19	12	37	24.61	9.0

WEISSE XII, 632.

April	30	12	37	53.40	9.0
May	16			53.48	9.0
	19			53.41	8.5

WEISSE XII, 646.

May	16	12	38	24.82	8.0

WEISSE XII, 652.

Jan.	11	12	38	53.96	8.0
Mar.	28			53.96	7.5
April	18			53.98	7.5
May	16			53.85	8.0
	19			53.85	

RUMKER 4124.

Mar.	28	12	40	2.94	8.0
April	18			2.94	7.0
May	22			2.95	6.5

(*) + 14° 28′.

May	23	12	40	3.74	

LACAILLE 5282.

May	11	12	40	26.94	6.8

LACAILLE 5283.

May	11	12	40	27.51	6.5

LACAILLE 5281.

April	21	12	40	31.43	6.7

B. A. C. 4297.

May	1	12	40	58.91	5.5
	15			59.00	6.0

28 COMÆ.

April	18	12	41	13.58	6.0
May	16			13.48	7.0
	22			13.48	6.0

29 COMÆ.

Jan.	11	12	41	53.23	6.0
Mar.	28			53.24	6.0
May	19			53.20	
	23			53.31	6.0

WEISSE XII, 736.

April	30	12	43	33.30	8.5

B. A. C. 4313.

April	21	12	44	15.19	
May	27			15.08	6.5

LACAILLE 5304.

1863.		h.	m.	s.	Mag.
May	1	12	44	29.44	6.4

WEISSE XII, 757.

May	16	12	44	41.45	8.3

LACAILLE 5315.

May	11	12	45	44.24	

ψ VIRGINIS.

April	30	12	47	4.54	5.5
May	1			4.56	4.5
	22			4.50	4.5
	23			4.55	

B. A. C. 4331.

April	21	12	47	11.54	5.5

WEISSE XII, 803.

April	18	12	47	33.95	8.5
May	16			33.99	9.0

LACAILLE 5326.

May	11	12	47	58.21	

B. A. C. 4339.

May	28	12	48	0.35	

B. A. C. 4342.

May	28	12	48	8.31	

WEISSE XII, 819.

May	19	12	48	29.28	

WEISSE XII, 835.

April	18	12	49	15.72	6.5

B. A. C. 4345.

April	25	12	49	27.03	
May	23			27.15	

α CANUM VENATICORUM.

April	25	12	49	28.33	
	27			28.45	
May	2			28.33	
	9			28.45	
	15			28.43	3.0
	23			28.38	
	27			28.40	3.0

LACAILLE 5346.

May	11	12	51	7.33	

LACAILLE 5347.

April	21	12	51	16.22	7.0

LACAILLE 5348.

1863.		h.	m.	s.	Mag.
May	1	12	51	21.79	8.0
	21			21.73	7.0

WEISSE XII, 878.

April	18	12	51	48.52	8.5
	30			48.55	8.0
May	16			48.53	8.5
	19			48.43	8.0

B. Z. 408, 84.

April	25	12	53	44.25	7.0

WEISSE XII, 918.

April	18	12	54	4.63	8.5
	30			4.73	8.5
May	16			4.62	9.0

78 URSÆ MAJORIS.

May	2	12	54	42.74	
	9			42.86	
	23			42.80	

LACAILLE 5368.

May	22	12	54	49.31	6.5

LACAILLE 5374.

May	1	12	55	46.33	7.7
	15			46.40	

LACAILLE 5382.

May	27	12	56	47.68	7.2

LACAILLE 5387.

May	27	12	57	35.46	7.7

B. A. C. 4378.

April	21	12	58	40.08	5.0
	25			40.10	5.3

LACAILLE 5405.

May	1	12	59	58.78	8.3

COMP. θ VIRGINIS.

April	21	13	2	42.18	11.0

θ VIRGINIS.

Jan.	11	13	2	42.26	
April	3			42.28	
	10			42.30	
	21			42.27	
May	9			42.26	
	16			42.22	
	21			42.30	
	22			42.25	
	23			42.25	
	27			42.37	
	28			42.27	
June	1			42.22	
	15			42.24	

B. A. C. 4405.

1863.		h.	m.	s.	Mag.
April	25	13	3	11.23	5.0

LACAILLE 5428.

May	1	13	4	2.83	6.3

53 VIRGINIS.

May	9	13	4	36.82	

Σ. CAT. GEN. 1510, (1st star.)

May	16	13	7	36.23	
	19			36.28	7.5

Σ. CAT. GEN. 1510, (2d star.)

May	16	13	7	39.59	
	19			39.53	8.3

58 VIRGINIS.

Jan.	11	13	10	7.30	6.5
May	28			7.28	

61 VIRGINIS.

April	3	13	11	5.02	

LACAILLE 5502.

April	10	13	13	58.21	
May	27			58.03	7.0

WEISSE XIII, 225.

April	21	13	14	15.81	8.7

LACAILLE 5510.

May	21	13	14	48.75	

WEISSE XIII, 235.

April	25	13	14	56.61	8.2

WEISSE XIII, 268.

April	21	13	17	11.12	8.0

α VIRGINIS.

Jan.	11	13	17	49.40	
	12			49.23:	
April	3			49.32	
	25			49.38	
May	1			49.30	
	2			49.28	
	9			49.37	
	20			49.28	
	28			49.33	
	29			49.36	
June	1			49.36	
July	22			49.41	
	23			49.21	
Aug.	5			49.32	
	10			49.34	
	11			49.31	
	15			49.36	
	19			49.39	

α VIRGINIS—Continued.

1863.		h.	m.	s.	Mag.
Aug.	20			49.31	
	21			49.33	
	22			49.32	
	24			49.23	
Sept.	2			49.31	
	4			49.29	
	5			49.21	
	21			49.27	
	26			49.39	
Oct.	27			49.30	
	28			49.27	
Nov.	3			49.24	
	5			49.26	
	6			49.31	
	19			49.25	
	24			49.24	

WEISSE XIII, 312.

April	21	13	19	52.27	9.0

B. A. C. 4496.

May	23	13	21	5.58	

B. Z. 464, 125.

April	25	13	21	52.14	9.0

WEISSE XIII, 365.

April	21	13	22	58.82	
May	16			58.94	
	19			58.87	
	23			58.98	

LACAILLE 5573.

May	22	13	23	46.97	
	27			47.00	6.3

WEISSE XIII, 392.

April	25	13	24	24.21	9.0

l^2 VIRGINIS.

May	9	13	24	41.37	

LACAILLE 5580.

May	21	13	24	48.63	
June	8			48.64	6.0

LACAILLE 5582.

May	15	13	25	9.26	8.8

WEISSE XIII, 413.

May	16	13	25	15.98	
	19			15.98	7.6

h VIRGINIS.

May	1	13	25	35.83	4.8
	2			35.83	5.0

B. A. C. 4527.

May	28	13	25	47.88	5.4

ζ VIRGINIS.

1863.		h.	m.	s.	Mag.
Jan.	12	13	27	(33.90)	
Mar.	28			33.71	
April	3			33.73	
	10			33.73	
	21			(33.58)	
	25			33.77	
	30			33.71	
May	1			33.71	
	11			33.67	
	15			33.72	
	16			33.68	
	21			33.75	
	22			33.72	
	23			33.77	
	27			38.71	
June	8			33.69	
	10			33.74	

(*) + 80° 50′.

May	19	13	28	40.57	8.5

LACAILLE 5613.

April	9	13	29	33.11	7.0
May	27			33.22	7.3

LACAILLE 5615.

April	9	13	29	46.86	7.0
May	27			47.00	7.5

B. A. C. 4547.

Mar.	28	13	30	32.95	7.0
May	2			32.82	7.0
	16			32.88	

B. A. C. 4548.

May	22	13	30	50.58	6.0

LACAILLE 5621.

April	21	13	30	51.80	6.0

(*) + 77° 0′.

April	18	13	32	3.75	8.2
	30			4.00	9.0
May	9			3.62	8.5

LACAILLE 5635.

May	22	13	32	19.92	7.0

LACAILLE 5636.

April	9	13	32	28.86	7.0
May	20			28.95	

(*) + 77° 17′.

Jan.	11	13	32	53.66	6.7
May	9			52.95	7.7
	19			53.57	7.2

LACAILLE 5639.

May	18	13	32	59.59	
	20			59.59	
	21			59.72	

LACAILLE 56645.

1863.		h.	m.	s.	Mag.
April	21	13	33	44.83	

m VIRGINIS.

May	2	13	34	15.99	5.5

LACAILLE 5649.

April	9	13	34	18.94	
May	27			19.00	

o VIRGINIS.

May	23	13	36	1.58	

LACAILLE 5665.

April	9	13	37	21.81	6.7
	21			21.94	6.0

B. Z. 462, 49.

Mar.	28	13	37	38.56	8.5
April	30			38.62	9.0

i CENTAURI.

April	18	13	37	44.40	5.0
May	14			44.19	5.0

B. A. C. 4581.

May	22	13	37	48 44	6.0
	27			48.60	5.8

WEISSE XIII, 651.

May	2	13	38	10.01	7.5

86 VIRGINIS.

May	2	13	38	28.92	5.8

(*) — 37° 33′.

May	20	13	40	1.01	

3 BOOTIS.

May	23	13	40	13.24	5.0

LACAILLE 5680.

April	9	13	40	29.48	6.6
	21			29.60	6.5
May	19			29.49	6.7

B. Z. 414, 16.

April	30	13	40	57.50	9.0

9 CENTAURI.

April	18	13	41	20.72	4.0
May	14			20.49	5.5

(*) + 78° 21′.

June	9	13	41	59.91	9.8

1863.		h. m.	s.	Mag.
η Ursæ Majoris.				
May	27	13 42	1.10	2.1
B. A. C. 4614.				
May	28	13 42	6.41	
89 Virginis.				
May	2	13 42	16.20	
	16		16.16	
	23		16.18	
	29		16.31	
B. Z. 413, 17.				
Mar.	28	13 42	19.55	6.0
May	22		19.59	5.8
Weisse XIII, 731.				
Mar.	31	13 42	51.84	7.5
B. Z. 414, 20.				
May	9	13 43	7.45	
B. A. C. 4620.				
April	9	13 43	25.76	6.3
	21		25.85	5.8
May	19		25.82	6.0
Lalande 25494.				
April	11	13 43	44.06	7.5
***k* Centauri, (1st star.)**				
April	18	13 43	45.32	6.0
June	8		45.49	6.0
***k* Centauri, (2d star.)**				
April	18	13 43	45.98	7.0
June	8		46.13	7.0
Piazzi XIII, 220.				
April	11	13 43	46.96	7.0
(*) — 37° 55′.				
May	18	13 44	1.05	8.5
Rumker 4483.				
April	30	13 44	4.07	8.8
Lacaille 5724.				
May	20	13 45	16.12	
June	17		16.20	
B. A. C. 4631.				
April	21	13 45	22.50	
May	14		22.42	6.0

1863.		h. m.	s.	Mag.
(*) + 24° 2′.				
May	22	13 45	37.28	9.0
Lacaille 5729.				
April	9	13 45	44.79	5.7
June	17		44.75	
B. Z. 412, 139.				
May	22	13 46	17.59	8.0
Rumker 4501.				
April	30	13 46	26.31	7.5
May	2		26.25	7.5
Weisse XIII, 785.				
Mar.	28	13 46	30.25	8.5
May	9		30.31	
Lacaille 5743.				
April	18	13 46	30.32	6.5
June	8		30.53	
(*) + 77° 50′.				
June	9	13 46	34.41	9.2
Weisse XIII, 794.				
April	30	13 46	54.02	9.0
May	2		53.90	8.5
i Draconis.				
May	16	13 47	20.57	
	23		20.69	
Lacaille 5754.				
May	27	13 47	53.02	7.0
η Bootis.				
Jan.	11	13 48	1.13	
	12		1.11:	
Mar.	31		1.12	
April	11		1.04	
May	20		1.05	
	21		1.11	
	28		1.11	
	29		1.13	
June	9		1.05	
	10		1.09	
	17		1.11	
Lacaille 5758.				
April	9	13 48	23.84	6.0
	21		23.77	6.5
May	14		23.69	7.0
	19		23.89	6.5
(*) — 37° 35′.				
April	21	13 48	30.96	7.0
Rumker 4517.				
Mar.	28	13 49	5.12	6.3
May	22		5.12	6.5

1863.		h. m.	s.	Mag.
B. Z. 462, 66.				
May	9	13 49	28.42	
Lacaille 5769.				
May	19	13 49	41.54	7.2
June	8		41.47	7.8
B. Z. 462, 67.				
April	30	13 49	43.90	7.3
Lacaille 5774.				
May	2	13 50	9.47	6.7
June	17		9.66	
Lacaille 5779.				
April	18	13 52	31.31	6.0
May	14		31.19	7.0
Σ Cat. Gen. 1570, (1st star.)				
April	30	13 52	39.10	8.5
Σ Cat. Gen. 1570, (2d star.)				
Mar.	28	13 52	39.35	9.3
April	30		39.48	7.8
Lacaille 5785.				
May	19	13 52	41.73	6.0
B. A. C. 4667.				
April	21	13 52	52.73	5.5
May	20		52.64	
(*) + 76° 58′.				
June	9	13 53	50.34	8.5
B. A. C. 4671.				
May	2	13 54	25.48	5.7
(*) + 2° 12′.				
April	9	13 54	26.53	
(*) + 77° 5′.				
May	9	13 54	27.05	8.3
June	9		26.82	8.0
Rumker 4551.				
May	22	13 54	30.89	7.0
τ Virginis.				
Jan.	12	13 54	(31.33:)	
April	9		31.36	
May	14		31.36	
	16		31.43	
	18		31.41	
	23		31.38	
	27		31.47	

1863.		h. m.	s.	Mag.
τ Virginis—Continued.				
May	28		31.45	
June	8		31.44	
	10		31.45	
	15		31.40	
(*) + 75° 27′.				
Mar.	31	13 54	39.67	9.0
(*) + 75° 25′.				
Mar.	31	13 55	27.06	8.8
(*) — 37° 31′.				
May	20	13 55	38.46	
Lacaille 5800.				
May	19	13 56	20.21	6.5
June	8		20.42	7.7
(*) — 37° 36′.				
May	20	13 56	32.38	
Lacaille 5812.				
June	16	13 57	34.21	7.5
	17		(34.46)	
Lacaille 5819.				
April	18	13 58	14.30	6.5
	21		14.47	5.5
May	19		14.40	6.0
π Hydræ.				
May	2	13 58	24.31	
Lacaille 5822.				
April	30	13 58	50.61	6.6
May	14		50.59	
June	5		50.64	
Weisse XIII, 1035.				
May	9	13 59	7.87	7.0
	22		7.81	6.5
Lacaille 5824.				
April	21	13 59	31.03	6.0
May	19		30.99	6.8
(*) — 37° 32′.				
May	16	14 0	20.82	8.3
α Draconis.				
May	16	14 0	36.02	
	21		36.00	
	23		36.07	
June	8		35.86	
	10		35.99	
	17		35.96	
Dec.	8 S. P.		35.89	

(*) + 66° 19′.

1863.		h.	m.	s.	Mag.
June	9	14	1	56.38	9.3

LACAILLE 5837.

May	14	14	2	6.08	6.5

LACAILLE 5838.

May	2	14	2	16.96	6.7
June	15			17.11	7.2

LACAILLE 5839.

April	18	14	2	40.99	6.0
	21			41.04	6.0
	30			40.95	6.0
May	9			40.97	6.5

LACAILLE 5842.

May	20	14	3	13.42	
June	15			13.46	7.5

LACAILLE 5843.

April	18	14	3	17.53	7.0
	21			17.66	6.5
	30			17.48	7.0

O. ARG. S. 13444.

Mar.	31	14	3	34.71	8.3
June	16			34.69	8.3

***d* BOOTIS.**

May	16	14	4	0.80	
	23			0.78	

LACAILLE 5855.

May	18	14	4	29.76	
	21			29.76	

50 HYDRÆ.

June	10	14	4	45.32	

B. A. C. 4711.

June	10	14	5	13.60	

κ VIRGINIS.

April	21	14	5	25.89	
May	2			25.85	4.5
	22			25.93	5.0
June	17			25.82	

WEISSE XIV, 83.

June	9	14	6	3.68	8.3
	16			3.63	9.0

LACAILLE 5860.

May	14	14	6	4.69	6.0
	20			4.80	
	29			4.88	

B. A. C. 4719.

1863.		h.	m.	s.	Mag.
June	15	14	6	55.40	6.3

LACAILLE 5872.

May	9	14	8	1.66	

LACAILLE 5873.

April	21	14	8	5.78	6.3
	30			5.70	6.5
May	2			5.49	6.7

LACAILLE 5878.

May	14	14	9	9.51	6.7
	20			9.81	

***a* BOOTIS.**

Mar.	28	14	9	16.71	
	31			16.64	
April	18			16.61	
May	21			16.64	
	22			16.62	
	29			16.62	
	30			16.64	
June	8			16.58	
	9			16.63	
	12			16.54	
	15			16.57	
	16			16 62	
	17			16.63	
Aug.	19			16.69	
	20			16.65	
	21			16.64	
Sept.	2			16.57	
	4			16.76	
	5			16.67	
	21			16.74	
	23			16.61	
	24			16.66	
	26			16.59	
	28			16.57	
	30			16.50	
Oct.	3			16.62	
	5			16.66	
	9			16.68	
	12			16.54	
	17			16.69	
Nov.	3			16.57	
	4			16.54	
	5			16.57	
	6			16.55	
	10			16.59	
	11			16.66	
	12			16.58	
	13			16.56	
	16			16.57	
	19			16.64	
	24			16.61	
	29			16.59	
	30			16.60	
Dec.	1			16.54	
	3			16.58	
	6			16.58	
	15			16.66	

LACAILLE 5880.

June	10	14	9	32.91	

LACAILLE 5883.

May	9	14	10	7.37	

LACAILLE 5886.

1863.		h.	m.	s.	Mag.
April	21	14	10	56.67	5.8
	30			56.63	5.5

λ VIRGINIS.

May	2	14	11	32.31	
	29			32.46	
June	12			32.45	5.7

ψ CENTAURI.

May	20	14	12	3.27	
	21			3.25	
June	16			3.12	5.0

LACAILLE 5898.

May	14	14	12	15.68	7.0
June	17			15.66	

WEISSE XIV, 221.

April	18	14	12	53.84	9.5
June	9			53.81	9.2

LACAILLE 5906.

June	12	14	13	37.63	8.0
	15			37.59	7.2

B. A. C. 4757.

April	21	14	13	56.96	5.0
	30			56.94	6.0
May	14			56.88	6.0
June	17			56.85	6.8

WEISSE XIV, 252.

April	18	14	14	49.73	9.2
May	2			49.71	9.0

LACAILLE 5922.

May	20	14	15	44.86	

2 LIBRÆ.

May	16	14	15	53.87	
	22			53.88	
	23			53.86	

LACAILLE 5923.

June	17	14	15	55.55	

LACAILLE 5926.

May	20	14	16	26.20	

LACAILLE 5925.

June	16	14	16	29.40	6.8

B. A. C. 4767.

May	21	14	16	49.81	
	29			49.87	6.0

LACAILLE 5932.

1863.		h.	m.	s.	Mag.
April	21	14	17	11.49	7.0
	30			11.41	7.0
May	14			11.48	6.7

WEISSE XIV, 314.

April	18	14	17	35.26	8.8

LACAILLE 5941.

May	2	14	18	6.73	6.7
June	8			7.00	7.8

(*) 112 W. + 3° 10′.

April	18	14	18	41.10	9.0

SCHWERD 835.

May	23	14	18	56.28	
June	9			56.16	8.0

LACAILLE 5945.

June	16	14	19	3.59	7.0
	17			3.75	

θ BOOTIS.

May	16	14	20	25.80	
	22			25.80	
June	15			25.72	

LACAILLE 5953.

May	14	14	20	58.68	6.5

LACAILLE 5956.

May	2	14	21	27.61	6.5
	19			27.60	6.0

LACAILLE 5955.

April	21	14	21	42.34	6.0
	30			(42.15)	
June	8			42.47	7.0

LACAILLE 5959.

May	29	14	21	47.39	

LACAILLE 5962.

June	8	14	22	27.55	6.2

LACAILLE 5967.

June	16	14	22	46.24	7.5
	17			46.41	

B. A. C. 4800.

May	29	14	22	58.67	
June	9			58.50	7.0

LACAILLE 5975.

April	30	14	23	40.28	6.0
May	14			40.31	6.7

O. Arg. S. 13694.

1863.			h. m.	s.	Mag.
April	18	. .	14 23	46.14	7.5
May	9	. .		46.08	

Lacaille 5979.

May	2	. .	14 24	5.68	7.0
June	15	. .		5.92	7.5

Lacaille 5988.

April	30	. .	14 25	45.25	6.5
May	14	. .		45.20	7.0

ρ Bootis.

Feb.	9	. .	14 25	47.75	
May	3	. .		47.71	
	9	. .		47.79	
	16	. .		47.70	
	18	. .		47.75	
	19	. .		47.67	
	20	. .		47.73	
	22	. .		47.73	5.0
	23	. .		47.69	4.5
June	8	. .		47.73	3.5
	10	. .		47.76	
	12	. .		47.69	4.3

Lacaille 5991.

June	16	. .	14 26	14.19	7.0

Rumker 4739.

April	18	. .	14 26	46.74	9.0
June	9	. .		46.75	8.5

Lacaille 6000.

May	2	. .	14 27	36.92	7.0
June	15	. .		37.11	8.0

Lacaille 5999.

April	21	. .	14 27	40.13	5.5

5 Ursæ Minoris.

Jan.	19	S. P.	14 27	52.33	4.3
May	20	. .		52.24	
	21	. .		51.69	
	29	. .		52.11	3.8
June	10	. .		51.90	
	17	. .		51.94	

(*) — 34° 11′.

June	15	. .	14 28	21.71	8.0

σ Bootis.

May	16	. .	14 28	35.06	
	22	. .		35.13	
	23	. .		35.10	5.0

Lacaille 6015.

June	16	. .	14 29	35.69	6.0

Lacaille 6020.

1863.			h. m.	s.	Mag.
April	30	. .	14 29	53.65	6.5
May	2	. .		53.51	6.5
	14	. .		53.63	6.5

Lacaille 6027.

April	21	. .	14 30	49.96	6.5

3 Libræ.

May	9	. .	14 31	17.46	6.8
	19	. .		17.34	6.5
June	9	. .		17.46	6.5

Lacaille 6040.

June	8	. .	14 32	10.64	7.5
	17	. .		10.65	8.5

Lacaille 6042.

June	12	. .	14 32	17.77	7.0
	15	. .		17.62	6.8

Lacaille 6038.

June	16	. .	14 32	26.04	5.5

Lacaille 6047.

June	12	. .	14 32	48.15	8.0
	15	. .		47.98	7.2

(*) — 32° 10′.

April	21	. .	14 33	7.17	7.0

B. A. C. 4842.

May	20	. .	14 33	16.53	5.3
	21	. .		16.52	

B. Z. 292, 1.

April	18	. .	14 33	25.95	8.5
May	16	. .		25.90	

(*) — 32° 9′.

April	30	. .	14 33	33.67	7.5

Lacaille 6053.

June	8	. .	14 33	38.83	8.0
	17	. .		38.82	9.0

Lacaille 6054.

April	21	. .	14 33	48.62	6.0
	30	. .		48.46	6.0
May	2	. .		48.36	6.0

Lacaille 6060.

May	9	. .	14 34	13.75	7.0
	19	. .		13.71	6.8

B. A. C. 4852.

1863.			h. m.	s.	Mag.
May	14	. .	14 35	6.34	5.0
June	16	. .		6.26	5.0

4 Libræ.

June	12	. .	14 35	8.58	6.0
	15	. .		8.47	6.0

μ Virginis.

May	3	. .	14 35	41.23	
	22	. .		41.12	4.5

B. A. C. 4857.

May	9	. .	14 36	14.56	
	29	. .		14.59	
June	8	. .		14.65	6.4

B. A. C. 4858.

May	14	. .	14 36	24.64	6.0
June	16	. .		24.54	5.5

Lalande F. 2523.

May	23	. .	14 37	37.29	7.0
June	9	. .		36.94	7.0

54 Hydræ.

May	19	. .	14 37	54.20	6.0
	29	. .		54.37	

(*) — 24° 51′. (Comp. 54 Hydræ.)

May	19	. .	14 37	54.65	

Lacaille 6086.

May	20	. .	14 38	18.99	
	21	. .		19.12	

(*) + 27° 40′. (Comp. ε Bootis.)

April	21	. .	14 38	52.16	
	30	. .		52.36	
May	16	. .		52.22	

ε Bootis.

April	18	. .	14 38	52.36	
	21	. .		52.33	
	30	. .		52.41	
May	3	. .		52.36	
	9	. .		52.35	
	16	. .		52.40	
June	10	. .		52.37	
	17	. .		52.37	

Lacaille 6099.

May	14	. .	14 39	30.14	6.8

56 Hydræ.

June	12	. .	14 39	35.01	
	15	. .		34.97	

57 Hydræ.

1863.			h. m.	s.	Mag.
May	29	. .	14 39	46.75	
June	8	. .		46.70	5.8

Lacaille 6100.

June	16	. .	14 39	54.25	7.0

B. A. C. 4884.

May	19	. .	14 40	22.01	

B. A. C. 4888.

June	12	. .	14 41	13.96	
	15	. .		13.81	5.5

μ Libræ.

Feb.	9	. .	14 41	39.01	
May	22	. .		38.73	4.0

Lacaille 6113.

June	8	. .	14 41	40.12	7.5

Lacaille 6118.

May	29	. .	14 42	48.16	

8 Libræ.

April	18	. .	14 42	56.84	6.0
May	2	. .		56.81	

Weisse XIV, 793.

May	22	. .	14 43	0.42	7.5

α Libræ.

Feb.	9	. .	14 43	8.34	
April	18	. .		8.29	
	21	. .		8.43	
	30	. .		8.30	
May	2	. .		8.31	
	3	. .		8.32	
	14	. .		8.31	
	19	. .		8.33	
	20	. .		8.34	
	21	. .		8.33	
	30	. .		8.34	
June	10	. .		(8.53)	
	15	. .		8.30	
	16	. .		8.27	
	17	. .		8.32	
	21	. .		8.32	

Lalande F. 2537.

May	23	. .	14 43	14.83	8.0

11 Libræ.

May	16	. .	14 43	45.67	6.0

B. A. C. 4901.

June	8	. .	14 44	4.83	4.8

LACAILLE 6134.

1863.			h.	m.	s.	Mag.
May	29	. .	14	45	29.25	

LACAILLE 6135.

May	14	. .	14	45	50.47	6.7
	20	. .			50.58	

B. A. C. 4911.

May	29	. .	14	46	3.67	
June	12	. .			3.76	

B. A. C. 4912.

April	21	. .	14	46	5.43	5.5
May	2	. .			5.35	6.0
	19	. .			5.41	5.5

12 LIBRÆ.

June	15	. .	14	46	12.63	5.8
	17	. .			12.61	6.4

LACAILLE 6152.

May	21	. .	14	47	54.40	

LACAILLE 6157.

April	21	. .	14	48	48.13	6.0
May	2	. .			47.91	
	14	. .			48.01	6.7
	19	. .			48.04	6.5

LACAILLE 6162.

June	12	. .	14	48	53.11	

LACAILLE 6164.

April	21	. .	14	49	8.75	6.5
May	2	. .			8.61	7.0
	14	. .			8.62	7.3
	19	. .			8.77	7.0

ξ^2 LIBRÆ.

May	3	. .	14	49	10.57	
	22	. .			10.54	4.5
	23	. .			10.57	5.5

B. A. C. 4923, (1st star.)

June	16	. .	14	49	17.13	7.8

B. A. C. 4923, (2d star.)

June	16	. .	14	49	18.13	6.8

14 LIBRÆ.

June	15	. .	14	49	21.05	7.3

59 HYDRÆ.

June	9	. .	14	50	22.57	6.0

LACAILLE 6178.

May	29	. .	14	50	24.40	

β URSÆ MINORIS.

1863.			h.	m.	s.	Mag.
Jan.	12	S. P.	14	51	9.46	
Feb.	4	S. P.			9.41	
	9	S. P.			9.59	
	9	. .			9.23:	
May	21	. .			9.52	
June	10	. .			9.16	
	17	. .			9.15	
Sept.	21	. .			9.25	

LACAILLE 6186.

May	29	. .	14	52	21.56	

LACAILLE 6190.

April	21	. .	14	53	19.52	5.8
May	2	. .			19.41	6.0
	19	. .			19.38	5.5

60 HYDRÆ.

June	8	. .	14	53	46.36	

LACAILLE 6198.

May	14	. .	14	54	25.83	5.2

2 SERPENTIS.

May	22	. .	14	54	38.91	5.0
	23	. .			38.93	5.5
June	16	. .			38.91	

LACAILLE 6199.

June	9	. .	14	54	49.85	6.5
	15	. .			49.86	7.4

LACAILLE 6204, (1st star.)

June	8	. .	14	55	14.86	

LACAILLE 6204, (2d star.)

June	8	. .	14	55	15.20	

LACAILLE 6215.

May	29	. .	14	56	11.95	

LACAILLE 6218.

May	19	. .	14	56	52.27	6.5

LACAILLE 6219.

April	21	. .	14	57	5.83	5.5
May	2	. .			5.72	6.0

Σ CAT. GEN. 1683, (1st star.)

May	22	. .	14	57	9.51	7.3

Σ CAT. GEN. 1683, (2d star.)

May	22	. .	14	57	9.69	7.0

LACAILLE 6221.

June	9	. .	14	57	27.03	6.7
	15	. .			27.02	6.8

ψ BOOTIS.

1863.			h.	m.	s.	Mag.
Feb.	9	. .	14	58	26.78	
May	20	. .			26.79	
	21	. .			26.82	
	23	. .			26.85	
	29	. .			26.88	4.3
	30	. .			26.77	
June	8	. .			(26.67)	4.3

LACAILLE 6229.

May	14	. .	14	58	37.66	7.0
June	17	. .			37.81	7.5

ν^1 LIBRÆ.

Feb.	9	. .	14	58	49.45	

B. A. C. 4972.

May	19	. .	14	59	6.69	6.7

LACAILLE 6237.

April	21	. .	14	59	48.74	7.0

B. A. C. 4979.

May	14	. .	15	0	40.75	

(*) —33° 51′.

June	15	. .	15	1	7.40	

b BOOTIS.

May	23	. .	15	2	21.23	

LACAILLE 6258.

May	2	. .	15	3	5.07	
	19	. .			5.22	

LACAILLE 6261.

June	9	. .	15	3	51.77	
	17	. .			51.83	

ι^1 LIBRÆ.

May	30	. .	15	4	14.81	

B. A. C. 4998.

June	8	. .	15	5	6.95	6.5

1 LUPI.

May	2	. .	15	6	3.18	5.0
	19	. .			3.26	5.0

B. A. C. 5018.

June	9	. .	15	6	52.34	7.0
	17	. .			52.29	

B. A. C. 5020.

June	17	. .	15	7	17.67	

LACAILLE 6293.

1863.			h.	m.	s.	Mag.
June	8	. .	15	8	0.53	7.5
	15	. .			0.34	7.3

3 SERPENTIS.

May	23	. .	15	8	13.92	

β LIBRÆ.

Feb.	9	. .	15	9	28.68	
	12	. .			28.65	
April	21	. .			28.66	
May	2	. .			28.67	
	16	. .			28.62	
	19	. .			28.63	
	22	. .			28.63	
	23	. .			28.58	
June	8	. .			28.69	2.2
	12	. .			28.77	
	17	. .			28.68	2.5
	23	. .			28.66	
July	24	. .			28.63	
Sept.	21	. .			28.67	

LACAILLE 6318.

May	14	. .	15	11	25.78	7.0

(*) —8° 2′, (dec. uncertain.)

Feb.	12	. .	15	11	35.33	

LACAILLE 6329.

June	8	. .	15	12	29.58	6.4
	15	. .			29.50	7.0

WEISSE XV, 210.

May	19	. .	15	12	37.05	9.0

28 LIBRÆ.

May	22	. .	15	12	57.63	6.0
	23	. .			57.69	6.0

LACAILLE 6342.

May	2	. .	15	13	30.18	6.5

LACAILLE 6354.

May	14	. .	15	14	45.83	7.0

WEISSE XV, 254.

Feb.	12	. .	15	15	5.98	8.7
May	16	. .			6.01	

B. A. C. 5066.

May	2	. .	15	15	38.93	6.5
	19	. .			39.00	

LACAILLE 6359.

June	8	. .	15	16	4.74	7.2
	15	. .			4.52	7.5

11 URSÆ MINORIS.

Jan.	12	S. P.	15	17	14.16	5.5

μ BOOTIS.

1863.			h.	m.	s.	Mag.
May	23	. .	15	19	12.02	4.5
June	23	. .			12.17	

RADCLIFFE 3378.

May	23	. .	15	19	13.45	6.0
June	23	. .			13.30	

B. A. C. 5091.

Feb.	12	. .	15	20	18.61	

ζ¹ LIBRÆ.

May	3	. .	15	20	21.97	
	30	. .			22.01	

B. A. C. 5090.

May	2	. .	15	20	29.07	6.0
	14	. .			29.12	6.0
	19	. .			29.09	6.0

γ² URSÆ MINORIS.

Jan.	12	S. P.	15	20	58.93	

O. ARG. N. 15370.

May	16	. .	15	21	20.50	
June	9	. .			20.40	
	23	. .			20.66	

10 SERPENTIS.

May	23	. .	15	21	34.00	

LACAILLE 6405.

May	2	. .	15	22	29.52	6.0

LACAILLE 6409.

May	14	. .	15	23	5.84	6.0

LACAILLE 6410.

June	8	. .	15	23	26.50	7.7

B. A. C. 5111, (1st star.)

May	19	. .	15	24	52.21	
June	17	. .			52.27	

B. A. C. 5111, (2d star.)

May	19	. .	15	24	52.83	
June	17	.			52.90	

RADCLIFFE 3398.

Feb.	12	. .	15	25	20.05	

LACAILLE 6421.

May	14	. .	15	25	24.05	6.6
June	16	. .			24.02	7.0

B. A. C. 5117.

1863.			h.	m.	s.	Mag.
June	12	. .	15	25	36.31	
	29	. .			36.32	

B. A. C. 5127.

May	19	. .	15	26	48.63	

LACAILLE 6439.

May	2	. .	15	27	24.76	5.6
June	20	. .			24.94	

γ LIBRÆ.

May	16	. .	15	27	41.80	
	23	. .			41.80	4.5

LALANDE 28391, (1st star.)

May	30	. .	15	27	56.06	8.5

LALANDE 28391, (2d star.)

May	30	. .	15	27	56.55	8.0

B. A. C. 5142.

May	14	. .	15	28	42.74	6.5

α COR. BOREALIS.

Feb.	12	. .	15	28	45.62	
April	6	. .			45.60	
May	3	. .			45.68	
	30	. .			45.62	
June	17	. .			45.61	
	23	. .			45.59	
	29	. .			45.67	
	30	. .			45.64	
Sept.	26	. .			45.68	
	28	. .			45.60	
	30	. .			45.70	
Oct.	3	. .			45.66	
	5	. .			45.68	
	9	. .			45.69	
	12	. .			45.68	
	17	. .			45.65	
	19	. .			45.64	
	20	. .			45.59	
	21	. .			45.68	
	28	. .			45.61	
	29	. .			45.70	
Nov.	7	. .			45.71	
	29	. .			45.66	
	30	. .			45.69	
Dec.	2	. .			45.69	
	3	. .			45.61	
	6	. .			45.62	
	10	. .			45.63	
	15	. .			45.67	
	29	. .			45.67	

LACAILLE 6447.

June	16	. .	15	29	20.94	7.0

LACAILLE 6448.

June	16	. .	15	29	30.15	6.5

ψ¹ LUPI.

May	2	. .	15	30	52.99	4.5
July	20	. .			53.10	5.0

RADCLIFFE 3415.

1863.			h.	m.	s.	Mag.
June	23	. .	15	30	57.79	8.0

(*) — 35° 42′.

April	16	. .	15	30	59.25	7.0

RADCLIFFE 3416.

June	23	. .	15	31	3.40	7.5

B. A. C. 5163.

May	14	. .	15	31	7.48	7.0
	19	. .			7.55	7.0

WEISSE XV, 585.

Feb.	12	. .	15	31	27.32	8.5

42 LIBRÆ.

May	16	. .	15	32	0.62	
	23	. .			0.59	

(*) — 35° 19′.

April	6	. .	15	33	31.33	7.5

B. A. C. 5171.

June	16	. .	15	33	32.82	

ψ² LUPI.

May	2	. .	15	33	46.20	5.0
July	20	. .			46.28	5.7

κ LIBRÆ.

May	3	. .	15	33	53.10	
	16	. .			53.06	
July	25	. .			53.18	5.0

LACAILLE 6491.

May	14	. .	15	33	54.81	7.0

O. ARG. S. 14787.

Feb.	12	. .	15	34	13.09	9.0

B. A. C. 5184, (1st star.)

June	30	. .	15	34	54.05	7.5

η LIBRÆ.

May	3	. .	15	36	12.12	
	16	. .			12.10	
June	23	. .			12.05	6.0
July	25	. .			12.10	5.5

(*) — 15° 58′.

June	30	. .	15	36	35.13	9.0

B. A. C. 5195.

May	30	. .	15	37	8.59	5.5

α SERPENTIS.

1863.			h.	m.	s.	Mag.
May	2	. .	15	37	22.48	
	14	. .			22.42	
	19	. .			22.41	
	23	. .			22.42	
	31	. .			22.39	
June	12	. .			22.47	
	17	. .			22.45	
	20	. .			22.43	
Sept.	23	. .			22.47	
	26	. .			22.44	
	28	. .			22.50	
	30	. .			22.51	
Oct.	8	. .			22.48	
	17	. .			22.42	
	19	. .			22.40	
	20	. .			22.48	
Dec.	3	. .			22.38	
	6	. .			22.44	
	13	. .			22.42	
	15	. .			22.39	
	29	. .			22.39	

O. ARG. S. 14851.

Feb.	12	. .	15	38	6.24	9.0

LACAILLE 6522.

April	6	. .	15	38	52.40	7.0

B. A. C. 5211.

July	20	. .	15	39	30.89	8.0

B. A. C. 5220.

June	12	. .	15	40	9.11	

B. A. C. 5221.

May	14	. .	15	40	14.90	7.0
	30	. .			14.87	6.0

LACAILLE 6541.

May	2	. .	15	40	53.32	7.0
June	16	. .			53.27	7.5
July	20	. .			53.55	8.0

WEISSE XV, 792.

Feb.	12	. .	15	41	56.15	8.8

LACAILLE 6555.

May	2	. .	15	42	42.39	6.5

B. A. C. 5240.

May	14	. .	15	43	34.58	5.7
	30	. .			34.59	5.5

ε SERPENTIS.

May	16	. .	15	43	50.40	
	22	. .			50.39	
June	9	. .			50.33	
	12	. .			50.33	
July	22	. .			50.36	
	24	. .			50.31	

LACAILLE 6566.

1863.		h.	m.	s.	Mag
June	16	15	44	30.01	
July	20			30.14	9.0

λ LIBRÆ.

1863.		h.	m.	s.	Mag.
Feb.	12	15	45	12.67	5.0

A SCORPII.

1863.		h.	m.	s.	Mag.
May	30	15	45	12.74	5.0

θ LIBRÆ.

1863.		h.	m.	s.	Mag.
May	3	15	45	51.53	

B. A. C. 5258.

1863.		h.	m.	s.	Mag.
May	14	15	45	59.04	5.5

3 SCORPII.

1863.		h.	m.	s.	Mag.
May	30	15	46	15.67	6.0

LACAILLE 6582.

1863.		h.	m.	s.	Mag.
April	6	15	46	45.28	6.3

47 LIBRÆ.

1863.		h.	m.	s.	Mag.
June	9	15	46	55.18	7.0

χ HERCULIS.

1863.		h.	m.	s.	Mag.
May	16	15	47	50.34	5.0
	22			50.33	5.0

ξ LUPI, (1st star.)

1863.		h.	m.	s.	Mag.
June	16	15	47	56.78	6.5

ξ LUPI, (2d star.)

1863.		h.	m.	s.	Mag.
June	16	15	47	57.44	6.5

B. A. C. 5275.

1863.		h.	m.	s.	Mag.
May	14	15	48	41.09	6.5

B. A. C. 5278.

1863.		h.	m.	s.	Mag.
Feb.	12	15	49	0.48	5.5

ζ URSÆ MINORIS.

1863.		h.	m.	s.	Mag.
Jan.	12, S. P.	15	49	8.30	
Feb.	13			8.30	
May	31			8.46	
July	24			8.22	
Oct.	27			(7.87)	

B. A. C. 5281.

1863.		h.	m.	s.	Mag.
June	9	15	49	29.79	6.5
	30			29.83	6.8

B. A. C. 5294.

1863.		h.	m.	s.	Mag.
May	14	15	50	56.45	6.6

B. A. C. 5296.

1863.		h.	m.	s.	Mag.
June	15	15	50	57.76	

LACAILLE 6624.

1863.		h.	m.	s.	Mag.
June	16	15	51	0.09	7.0

δ SCORPII.

1863.		h.	m.	s.	Mag.
Feb.	12	15	52	3.62	3.0
April	6			3.70	
May	16			3.61	
	22			3.52	
June	9			3.61	4.0
	29			3.65	
	30			3.67	
July	20			3.67	
	22			3.70	
Aug.	21			3.72	
	22			3.57	

B. A. C. 5308.

1863.		h.	m.	s.	Mag.
May	14	15	53	59.51	5.5

LACAILLE 6648.

1863.		h.	m.	s.	Mag.
June	16	15	54	6.54	7.3
July	22			6.66	7.5

B. A. C. 5312.

1863.		h.	m.	s.	Mag.
July	24	15	54	45.25	7.5

LACAILLE 6657.

1863.		h.	m.	s.	Mag.
June	12	15	55	23.00	
	15			22.92	7.0

LACAILLE 6658.

1863.		h.	m.	s.	Mag.
June	15	15	55	27.34	8.0

B. A. C. 5317.

1863.		h.	m.	s.	Mag.
May	22	15	55	30.55	6.5

WEISSE XV, 1057.

1863.		h.	m.	s.	Mag.
June	9	15	56	5.33	8.8

(*) — 11° 29′.

1863.		h.	m.	s.	Mag.
June	30	15	56	41.86	7.8

β SCORPII.

1863.		h.	m.	s.	Mag.
Feb.	12	15	57	18.04	
May	14			18.06	
	31			18.11	
June	1			18.04	
	15			18.14	2.7
	16			18.10	4.0
	23			18.06	
	29			18.13	
July	10			18.07	
Aug	21			17.98	
	22			18.10	

B. A. C. 5330.

1863.		h.	m.	s.	Mag.
May	14	15	57	18.49	
June	16			18.47	

WEISSE XV, 1080.

1863.		h.	m.	s.	Mag.
May	16	15	57	21.71	

WEISSE XV, 1086.

1863.		h.	m.	s.	Mag.
June	9	15	57	26.86	

B. A. C. 5335.

1863.		h.	m.	s.	Mag.
May	22	15	57	45.71	6.0

(*) — 38° 44′.

1863.		h.	m.	s.	Mag.
April	6	15	59	11.69	6.6

LACAILLE 6695.

1863.		h.	m.	s.	Mag.
April	6	15	59	12.46	6.3

11 SCORPII.

1863.		h.	m.	s.	Mag.
June	30	15	59	50.15	6.0

B. A. C. 5354.

1863.		h.	m.	s.	Mag.
May	14	16	0	22.32	6.0
	22			22.24	6.0

O. ARG. S. 15292.

1863.		h.	m.	s.	Mag.
June	16	16	1	14.58	7.3

B. A. C. 5374.

1863.		h.	m.	s.	Mag.
June	15	16	2	20.53	5.3
July	22			20.57	5.7

(*) — 21° 15′.

1863.		h.	m.	s.	Mag.
June	30	16	2	24.63	9.2

WEISSE XVI, 20.

1863.		h.	m.	s.	Mag.
May	16	16	2	31.08	
June	9			31.00	5.5

B. A. C. 5378.

1863.		h.	m.	s.	Mag.
May	14	16	2	59.51	6.5
	22			59.49	6.5

(*) — 26° 44′.

1863.		h.	m.	s.	Mag.
May	14	16	3	2.26	7.5

WEISSE XVI, 38.

1863.		h.	m.	s.	Mag.
June	9	16	3	13.10	8.0
	16			13.12	7.3
	23			13.06	

ν SCORPII.

1863.		h.	m.	s.	Mag.
July	10	16	3	51.75	4.1
	20			51.79	

B. A. C. 5389.

1863.		h.	m.	s.	Mag.
June	15	16	4	57.28	7.7
	29			57.15	
July	22			57.26	7.8

B. A. C. 5394.

1863.		h.	m.	s.	Mag.
May	22	16	5	20.63	6.0
July	24			20.62	7.0

B. A. C. 5406.

1863.		h.	m.	s.	Mag.
April	6	16	5	57.31	5.0

B. A. C. 5403.

1863.		h.	m.	s.	Mag.
May	14	16	6	24.66	5.8
July	24			24.75	6.6

B. A. C. 5409.

1863.		h.	m.	s.	Mag.
July	10	16	6	44.62	7.4

WEISSE XVI, 111.

1863.		h.	m.	s.	Mag.
June	9	16	6	51.92	8.0
	16			51.87	7.8
	23			51.92	

δ OPHIUCHI.

1863.		h.	m.	s.	Mag.
May	31	16	7	0.66	
June	1			0.68	
July	20			0.70	

B. A. C. 5418.

1863.		h.	m.	s.	Mag.
May	22	16	8	1.98	6.5

B. A. C. 5429.

1863.		h.	m.	s.	Mag.
May	14	16	9	37.24	5.5
June	15			37.31	5.4
July	10			37.29	5.3

ε OPHIUCHI.

1863.		h.	m.	s.	Mag.
May	16	16	10	55.01	

19 SCORPII.

1863.		h.	m.	s.	Mag.
May	14	16	12	13.06	5.5

LACAILLE 6796.

1863.		h.	m.	s.	Mag.
July	20	16	12	26.26	
	22			26.07	7.4

LACAILLE 6797.

1863.		h.	m.	s.	Mag.
July	20	16	12	34.32	
	22			34.19	7.2

COMP. σ SCORPII.

1863.		h.	m.	s.	Mag.
July	24	16	12	39.58	9.2

σ SCORPII.

1863.		h.	m.	s.	Mag.
May	31	16	12	40.94	
June	1			40.91	
	15			41.01	4.0
	29			40.96	
July	24			41.01	3.3

Star	1863.		h. m.	s.	Mag.
O. Arg. S. 15571.	June 9		16 14	51.89	7.0
Lacaille 6815, (1st star.)	July 20		16 14	56.60	
	22			56.53	7.5
Lacaille 6815, (2d star.)	July 20		16 14	56.89	
	22			56.79	7.7
B. A. C. 5457.	June 15		16 15	12.07	6.9
	July 10			12.01	5.8
Lacaille 6818.	June 16		16 15	22.29	7.0
B. A. C. 5465.	May 14		16 15	53.94	7.0
ψ Ophiuchi.	May 16		16 15	54.86	
B. A. C. 5487.	July 10		16 18	44.56	7.2
α Scorpii.	Feb. 12		16 20	49.71	
	May 3			49.70	
	4			49.75	
	14			49.77	
	22			49.71	
	30			49.74	
	31			49.78	
	June 1			49.70	
	9			49.70	
	15			49.70	
	16			49.72	
	29			49.63	
	July 10			49.70	
	22			49.76	
	24			49.73	
	Aug. 22			49.74	
O. Arg. S. 15671.	May 16		16 21	29.10	7.0
22 Scorpii.	May 16		16 21	42.33	
η Draconis.	July 20		16 22	5.92	3.0
B. A. C. 5513.	July 22		16 22	47.55	6.4
φ Ophiuchi.	May 3		16 23	7.73	
	30			7.76	
B. A. C. 5518.	July 10		16 23	39.35	8.0
Lacaille 6871.	May 14		16 23	56.49	7.0
	June 9			56.43	7.0
	July 24			56.56	
B. A. C. 5522.	June 16		16 24	6.36	7.0
Lacaille 6891.	May 14		16 27	8.19	7.0
	July 24			8.25	
B. A. C. 5538.	June 9		16 27	10.03	4.5
	16			9.99	5.0
τ Scorpii.	Feb. 12		16 27	10.30	
	May 4			10.37	
	16			10.23	
	July 20			10.35	
(* 67) W. —4° 7′.	May 3		16 27	45.18	
A Draconis.	Jan. 19	S. P.	16 28	16.38	5.0
	Feb. 6	S. P.		16.51	
	July 10			16.13	4.8
	22			16.02	5.3
ζ Ophiuchi.	May 3		16 29	27.13	
	4			27.15	
	16			27.16	
	22			27.17	
	30			27.17	
	June 15			27.22	2.8
	July 8			27.12	
	24			27.19	2.8
	Aug. 22			27.18	
B. A. C. 5556.	June 9		16 30	26.22	7.0
B. A. C. 5564.	June 15		16 31	30.84	8.0
	July 10			30.80	7.3
Lacaille 6930.	July 20		16 32	42.08	6.2
	22			42.14	5.8
B. A. C. 5571.	July 24		16 33	7.34	6.8
B. A. C. 5572.	Mar. 11		16 33	12.26	7.0
	June 9			12.50	7.0
24 Scorpii.	Feb. 12		16 33	28.79	
	Aug. 22			28.73	
Weisse XVI, 637.	May 3		16 33	32.44	9.0
Radcliffe 3589	June 16		16 33	36.49	6.0
	23			36.99	
B. A. C. 5595.	June 15		16 35	13.15	7.5
ζ Herculis.	May 4		16 36	0.57	
	June 29			0.56	
	July 8			0.48	
	9			0.50	
	10			0.46	2.6
	20			0.53	3.0
	22			0.51	2.6
B. A. C. 5603.	July 24		16 36	15.20	6.4
B. A. C. 5605.	June 9		16 36	24.40	6.7
B. A. C. 5608.	June 15		16 37	10.52	7.7
B. A. C. 5612.	July 18		16 37	55.37	7.5
25 Scorpii.	Mar. 11		16 38	17.20	6.0
	July 10			17.37	6.3
B. A. C. 5623.	June 9		16 39	43.38	6.7
	23			43.38	
B. A. C. 5630.	July 18		16 40	34.54	7.9
	24			34.54	6.8
18 Ophiuchi.	June 15		16 41	13.34	7.5
	July 9			13.39	7.0
Lacaille 6999, (1st star.)	July 8		16 41	34.20	7.0
	10			34.16	6.3
Lacaille 6999, (2d star.)	July 8		16 41	34.29	9.0
	10			34.23	9.2
(*) —4° 54′.	June 30		16 41	41.34	8.5
Weisse XVI, 792.	June 30		16 41	45.06	8.0
(*) —40° 30′.	Mar. 11		16 42	23.35	7.0
μ¹ Scorpii.	July 22		16 42	23.59	3.3
B. A. C. 5639.	Mar. 11		16 42	44.69	6.3
B. A. C. 5641.	June 9		16 42	49.14	7.0
	15			49.29	8.0
μ² Scorpii.	July 22		16 42	51.61	4.0
Lacaille 7011.	July 8		16 43	9.44	7.0
	10			9.50	5.7
B. A. C. 5653.	July 18		16 44	6.04	7.0
	24			6.12	7.4
B. A. C. 5671.	Mar. 11		16 45	40.26	6.0
	June 16			40.36	6.0
B. A. C. 5672.	June 9		16 45	49.59	7.0
B. A. C. 5678.	June 30		16 46	9.99	6.7
	July 18			10.09	6.5
	24			10.03	6.0
22 Ophiuchi.	June 23		16 46	23.34	7.0
(*) — 31° 12′.	June 30		16 46	34.72	7.5
B. A. C. 5684.	July 18		16 46	53.03	7.3
	24			53.16	7.5

(*) —31° 14′.

1863.			h.	m.	s.	Mag.
June	30	. .	16	47	18.68	

B. A. C. 5690.

July	18	. .	16	47	18.82	6.9
	24	. .			18.83	7.2

B. A. C. 5695.

June	15	. .	16	47	57.14	7.0

Lacaille 7065.

July	8	. .	16	49	24.10	6.2
	10	. .			24.08	6.0

κ Ophiuchi.

Mar.	11	. .	16	51	2.60	
May	4	. .			2.55	
June	15	. .			2.59	3.8
	16	. .			2.65	
	23	. .			2.66	
	29	. .			2.61	
	30	. .			2.54	
July	9	. .			2.59	
	18	. .			2.60	
	24	. .			2.62	
Aug.	23	. .			2.62	

B. A. C. 5738.

July	10	. .	16	55	24.09	6.2
	20	. .			24.05	6.6
	22	. .			24.06	7.2

B. A. C. 5739.

July	18	. .	16	55	46.29	7.0
	24	. .			46.30	7.8

(*) — 31° 12′.

July	18	. .	16	55	56.49	7.8

B. A. C. 5743.

July	9	. .	16	55	59.80	

O. Arg. S. 16284.

July	8	. .	16	56	6.96	6.5
	10	. .			6.98	6.0
	20	. .			6.96	6.3
	22	. .			6.92	7.0

O. Arg. S. 16298.

June	30	. .	16	56	46.51	7.0

Lacaille 7128.

May	4	. .	16	57	7.04	

Lacaille 7133.

Mar.	11	. .	16	58	29.57	

B. A. C. 5762.

July	18	. .	16	58	44.74	6.8

B. A. C. 5771.

1863.			h.	m.	s.	Mag.
June	30	. .	17	0	7.26	6.0

ε Ursæ Minoris.

Jan.	2	S. P.	17	0	26.19	
	5	S. P.			26.97	3.8
Feb.	23	S. P.			27.12	
June	15	. .			27.21	4.6
July	8	. .			27.08	
	10	. .			26.36	3.8
	20	. .			26.78	4.5
	21	. .			26.47	

η Ophiuchi.

Mar.	11	. .	17	2	21.09	
July	9	. .			21.13	4.0

Lacaille 7163.

July	8	. .	17	3	37.29	6.0
	22	. .			37.36	7.3

B. A. C. 5792.

July	10	. .	17	3	39.28	6.5
	24	. .			39.21	6.2

B. A. C. 5793.

July	10	. .	17	3	52.54	5.6
	21	. .			52.82	6.0

O. Arg. N. 16862.

June	30	. .	17	4	51.22	

B. A. C. 5796.

July	10	. .	17	5	15.86	6.9

O. Arg. S. 16505.

July	26	. .	17	6	31.80	7.5

A Ophiuchi, (1st star.)

July	22	. .	17	6	44.32	5.2
	26	. .			44.22	6.0
Aug.	22	. .			44.35	
	23	. .			44.30	

A Ophiuchi, (2d star.)

July	22	. .	17	6	44.54	5.4
	26	. .			44.46	6.0
Aug.	22	. .			44.54	
	23	. .			44.47	

B. A. C. 5809.

June	16	. .	17	6	55.02	6.0
July	9	. .			54.94	
	20	. .			55.11	6.8

Schwerd 1014.

June	23	. .	17	7	23.49	

B. A. C. 5813.

July	26	. .	17	7	36.92	7.0
Aug.	22	. .			36.89	7.5
	23	. .			36.89	7.5

α Herculis.

1863.			h.	m.	s.	Mag.
May	16	. .	17	8	15.89	
June	9	. .			15.91	
	30	. .			15.88	
July	8	. .			15.83	
	10	. .			15.90	
	21	. .			15.88	
Oct.	12	. .			15.90	
	17	. .			15.91	
	20	. .			15.90	
	21	. .			15.89	
	22	. .			15.85	
	28	. .			15.92	
	29	. .			15.89	
Nov.	3	. .			16.00	
	6	. .			15.91	
	7	. .			15.91	
	13	. .			15.92	
	14	. .			15.94	
Dec.	25	. .			15.95	
	29	. .			15.92	

α^2 Herculis.

May	16	. .	17	8	16.23	
July	21	. .			16.21	

B. A. C. 5833.

June	16	. .	17	10	14.86	6.5
July	20	. .			14.98	7.2

O. Arg. S. 16623.

Aug.	22	. .	17	11	49.10	8.0
	23	. .			49.16	7.8

ξ Ophiuchi.

Mar.	11	. .	17	12	36.99	
June	23	. .			36.88	

Lacaille 7241.

July	21	. .	17	13	6.67	5.9

B. A. C. 5848.

June	16	. .	17	13	10.82	7.0
July	20	. .			10.94	7.7

θ Ophiuchi.

Mar.	11	. .	17	13	24.84	

(*) — 39° 47′.

May	15	. .	17	13	37.98	

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Aug.	22	. .	17	15	11.93	8.5

B. A. C. 5861.

July	10	. .	17	15	32.64	7.8
	22	. .			32.53	8.7

B. A. C. 5868.

July	20	. .	17	16	33.00	6.7

Lacaille 7282.

1863.			h.	m.	s.	Mag.
July	21	. .	17	17	26.20	7.0

b Ophiuchi.

Mar.	11	. .	17	17	49.37	4.0
May	15	. .			49.38	4.5
June	9	. .			49.37	
	23	. .			49.25	
July	8	. .			49.38	4.0
	9	. .			49.41	5.5
	20	. .			49.35	4.3
	22	. .			49.35	4.5
Aug.	22	. .			49.33	
	23	. .			49.34	

B. A. C. 5878.

July	10	. .	17	18	15.58	6.2

σ Ophiuchi.

July	9	. .	17	19	34.24	4.5

B. A. C. 5892.

June	16	. .	17	19	38.32	7.0

B. A. C. 5896.

Aug.	23	. .	17	20	0.41	

B. A. C. 5897.

July	21	. .	17	20	9.50	6.5

Lacaille 7312.

July	8	. .	17	20	52.19	7.0
	10	. .			52.20	7.0
	20	. .			52.19	7.8

O. Arg. N. 17136.

June	23	. .	17	20	59.87	7.6

Lacaille 7324.

June	16	. .	17	22	33.87	7.0
July	8	. .			33.96	6.4
	10	. .			34.01	6.5
	20	. .			34.00	7.4

c^2 Ophiuchi.

Mar.	11	. .	17	22	52.53	5.0
	13	. .			52.56	
July	9	. .			52.57	5.7
	26	. .			52.56	5.0

B. A. C. 5909.

Aug.	23	. .	17	23	2.87	6.0

Lacaille 7330.

July	21	. .	17	23	8.45	5.9

(*) — 32° 26′.

July	21	. .	17	25	16.23	7.7

1863.			m. h. s.	Mag.
B. A. C. 5924.				
Aug.	8	. .	17 25 33.45	6.0
	23	. .	33.41	7.0
B. A. C. 5923.				
June	16	. .	17 25 33.76	5.7
July	10	. .	33.90	5.8
	21	. .	33.88	6.0
LACAILLE 7349.				
July	8	. .	17 26 11.04	6.1
	22	. .	11.09	7.2
B. A. C. 5938.				
Aug.	10	. .	17 27 51.83	7.0
LACAILLE 7357.				
July	8	. .	17 28 16.90	6.8
	22	. .	16.91	6.8
LACAILLE 7362.				
June	16	. .	17 28 19.92	7.0
July	20	. .	20.13	8.0
α OPHIUCHI.				
Jan.	4	. .	17 28 26.14	
	11	. .	26.15	
Feb.	12	. .	26.32	
Mar.	11	. .	26.25	
May	15	. .	26.20	
June	23	. .	26.19	
July	2	. .	26.18	
	21	. .	26.24	
Aug.	6	. .	26.18	
	8	. .	26.17	
	15	. .	26.25	
Oct.	17	. .	26.26	
	19	. .	26.19	
	20	. .	26.22	
	22	. .	26.21	
	29	. .	26.18	
Nov.	6	. .	26.28	
	12	. .	26.11	
	13	. .	26.24	
	16	. .	26.25	
	17	. .	26.25	
	20	. .	26.17	
	25	. .	26.26	
B. A. C. 5946.				
Aug.	22	. .	17 29 22.73	
ν^1 DRACONIS.				
July	9	. .	17 29 25.33	4.5
ν^2 DRACONIS.				
July	9	. .	17 29 30.57	4.7
B. A. C. 5960.				
Aug.	8	. .	17 30 53.75	7.0
(*) — 32° 9′.				
Aug.	8	. .	17 31 3.42	7.0

1863.			m. m. s.	Mag.
(*) — 32° 9′.				
Aug.	8	. .	17 31 13.90	8.0
B. A. C. 5964.				
Aug.	8	. .	17 31 51.07	7.0
B. A. C. 5966.				
Aug.	15	. .	17 31 54.27	7.8
LACAILLE 7395.				
April	9	. .	17 32 45.62	6.0
June	16	. .	45.49	6.0
July	21	. .	45.69	6.7
κ SCORPII.				
July	10	.	17 32 48.32	3.0
ο SERPENTIS.				
Mar.	11	. .	17 33 32.89	
July	9	. .	32.88	5.0
Aug.	22	. .	32.85	
B. A. C. 5977.				
July	18	. .	17 33 55.60	6.2
	22	. .	55.46	6.7
B. A. C. 5980.				
Aug.	8	. .	17 34 25.56	6.7
LACAILLE 7406.				
Aug.	10	. .	17 34 25.71	6.0
RUMKER 5958.				
Aug.	6	. .	17 34 51.37	7.5
58 OPHIUCHI.				
Mar.	11	. .	17 35 2.48	
Aug.	23	. .	2.46	
LACAILLE 7414.				
April	9	. .	17 35 38.69	6.5
June	16	. .	38.71	7.0
July	10	. .	38.84	7.9
B. A. C. 5989.				
Aug.	15	. .	17 35 45.55	7.0
	22	. .	45.52	6.8
β OPHIUCHI.				
July	9	. .	17 36 33.52	4.2
LACAILLE 7420.				
July	21	. .	17 36 48.14	5.0

1863.			h. m. s.	Mag.
LACAILLE 7424.				
July	18	. .	17 37 30.93	6.0
LACAILLE 7423.				
July	21	. .	17 37 35.90	7.0
ω DRACONIS.				
May	15	. .	17 37 46.57	
July	20	.	46.38	4.2
	22	. .	46.20	5.0
ι^1 SCORPII.				
Aug.	10	. .	17 37 47.52	3.5
	11	. .	47.53	3.5
(*) — 23° 38′.				
Aug.	15	. .	17 38 9.55	7.3
	22	. .	9.45	7.5
LACAILLE 7430.				
April	9	. .	17 38 29.96	6.5
June	16	. .	29.88	6.7
3 SAGGITARII.				
Aug.	6	. .	17 38 44.91	
LACAILLE 7433.				
July	18	. .	17 38 51.45	6.5
B. A. C. 6011.				
Aug.	6	. .	17 39 7.08	7.2
LACAILLE 7448.				
July	21	. .	17 40 6.34	6.5
γ OPHIUCHI.				
July	9	. .	17 40 52.49	5.0
μ HERCULIS.				
Jan.	11	. .	17 40 58.83	
Mar.	11	. .	58.83	
July	10	. .	58.79	3.4
	20	. .	58.82	3.2
	27	. .	58.75	3.3
Aug.	10	. .	58.84	
	11	. .	58.88	
	23	. .	58.91	
B. A. C. 6023.				
Aug.	15	. .	17 41 23.92	6.5
LACAILLE 7459.				
April	9	. .	17 41 37.42	7.0
June	16	. .	37.49	7.0
Aug.	8	. .	37.43	7.5
(*) — 35° 19′.				
July	21	. .	17 41 43.47	6.5

1863.			h. m. s.	Mag.
(*) — 35° 19′.				
July	21	. .	17 41 45.42	8.0
B. A. C. 6031.				
July	18	. .	17 43 1.46	5.5
LACAILLE 7469.				
Aug.	15	. .	17 43 29.24	7.5
B. A. C. 6037.				
July	21	. .	17 43 56.69	6.0
Aug	8	. .	56.67	6.3
	10	. .	56.57	7.3
(*) — 25° 47′.				
July	9	. .	17 44 3.66	6.8
B. A. C. 6041.				
Aug.	23	. .	17 44 4.44	7.2
B. A. C. 6043.				
Aug.	11	. .	17 44 24.02	6.0
ψ^1 DRACONIS.				
Feb.	9	S. P.	17 44 26.40	
	16	S. P.	26.41	4.3
July	10	. .	25.88	4.6
	20	.	25.11	4.5
	22	. .	25.96	5.2
(*) — 34° 45′.				
Aug.	11	. .	17 44 34.67	7.0
(*) — 34° 43′.				
Aug.	11	. .	17 44 54.52	6.0
B. A. C. 6045.				
July	21	. .	17 45 8.54	5.0
(*) — 34° 32′.				
Aug.	10	. .	17 45 18.41	6.5
(*) — 34° 35′.				
Aug.	10	. .	17 45 28.74	7.0
(*) — 34° 47′.				
July	21	. .	17 45 28.93	6.5
B. A. C. 6051.				
June	16	. .	17 45 39.47	6.0
July	18	. .	39.57	5.7
63 OPHIUCHI.				
Aug.	23	.	17 46 17.04	6.8

O. ARG. S. 17349.

1863.			h.	m.	s.	Mag.
Aug.	15	. .	17	46	52.27	7.5
B. A. C. 6057.						
Aug.	11	. .	17	47	6.71	6.0
(*) — 34° 35′.						
Aug.	10	. .	17	47	27.76	7.5
B. A. C. 6059.						
April	9	. .	17	47	39.92	6.0
Aug.	15	. .			40.12	6.5
B. A. C. 6063.						
July	22	. .	17	47	51.52	6.2
LACAILLE 7499.						
July	21	. .	17	47	58.77	5.5
LACAILLE 7504.						
June	16	. .	17	48	15.32	7.0
July	21	. .			15.44	5.2
(*) — 36° 51′.						
July	18	. .	17	49	21.14	8.2
B. A. C. 6070.						
July	18	. .	17	49	25.12	5.8
LACAILLE 7516.						
Aug.	10	. .	17	49	42.36	7.0
B. A. C. 6072.						
July	22	. .	17	49	46.08	6.9
B. A. C. 6074, (1st star.)						
Aug.	15	. .	17	50	5.96	7.0
B. A. C. 6074, (2d star.)						
Aug.	15	. .	17	50	6.34	8.5
B. A. C. 6076.						
Aug.	8	. .	17	50	42.64	6.5
	11	. .			42.67	7.0
(*) — 36° 58′.						
Aug.	10	. .	17	51	8.16	7.5
4 SAGITTARII.						
April	9	. .	17	51	14.61	4.5
Aug.	23	. .			14.72	

B. A. C. 6083.

1863.			h.	m.	s.	Mag.
May	14	. .	17	52	20.13	
June	16	.			20.19	6.7
July	18	. .			20.20	5.9
	21	. .			20.24	5.8
Aug.	11	. .			20.20	6.2
(*) — 36° 22′.						
July	18	. .	17	52	41.89	8.0
	21	. .			41.90	7.2
(*) — 24° 13′.						
April	9	. .	17	53	16.18	7.0
O. ARG. S. 17510.						
April	9	. .	17	54	3.95	6.5
Aug.	15	. .			4.13	7.5
	23	. .			3.96	
O. ARG. S. 17512.						
Aug.	15	. .	17	54	5.24	8.0
7 SAGITTARII.						
Aug.	15	. .	17	54	16.36	6.8
9 SAGITTARII, (1st star.)						
April	9	. .	17	55	17.26	6.5
Aug.	22	. .			17.30	
	23	. .			17.35	
O. ARG. S. 17540.						
April	9	. .	17	55	21.91	6.5
Aug.	23	. .			21.90	
O. ARG. S. 17553.						
Aug.	23	. .	17	55	50.70	
LACAILLE 7551.						
May	3	. .	17	56	15.24	6.8
July	21	. .			15.42	7.0
B. A. C. 6111.						
April	9	. .	17	56	35.27	6.5
γ^2 SAGITTARII.						
May	14	. .	17	56	48.85	4.5
July	8	. .			48.98	2.4
	10	. .			48.91	3.5
	18	. .			48.91	4.0
	22	. .			48.82	3.2
Aug.	11	. .			48.89	3.0
	15	. .			48.91	
	23	.			48.83	
B. A. C. 6120.						
June	16	. .	17	57	54.45	6.0
LACAILLE 7563.						
Aug.	10	. .	17	58	14.75	7.0

B. A. C. 6128.

1863.			h.	m.	s.	Mag.
Aug.	11	. .	17	59	31.02	7.0
LACAILLE 7580.						
May	3	. .	17	59	52.77	
	14	. .			52.88	6.5
B. A. C. 6131.						
July	21	. .	17	59	55.69	7.0
Aug.	15	. .			55.69	7.0
B. A. C. 6130.						
April	9	. .	17	59	56.13	6.0
B. A. C. 6132.						
Aug.	22	. .	18	0	14.53	7.0
	23	. .			14.59	
o HERCULIS.						
Aug.	6	. .	18	2	4.89	
LACAILLE 7595.						
May	3	. .	18	2	19.31	6.5
June	16	. .			19.13	7.0
(*) — 17° 10′.						
July	18	. .	18	2	36.21	9.5
Aug.	11	. .			36.09	9.5
(*) — 17° 10′.						
July	18	. .	18	2	37.23	8.5
Aug.	11	. .			37.14	8.7
	23	. .			37.17	8.3
B. A. C. 6160.						
Aug.	15	. .	18	3	4.40	5.5
(*) — 37° 39′.						
July	8	. .	18	4	35.44	8.6
(*) — 34° 38′.						
May	14	. .	18	4	46.47	7.2
July	21	. .			46.59	6.5
μ SAGITTARII.						
Mar.	31	. .	18	5	23.43	
April	9	. .			23.42	4.0
May	3	. .			23.51	
June	9	. .			23.45	
	16	. .			23.47	
July	9	. .			23.49	5.0
	18	. .			23.42	4.0
	20	. .			23.51	
Aug.	11	. .			23.43	
	23	. .			23.46	
	24	. .			23.45	
Sept.	21	.			23.46	
(*) — 29° 48′.						
Aug.	15	. .	18	5	39.80	7.0

LACAILLE 7629.

1863.			h.	m	s.	Mag.
May	14	. .	18	6	7.99	6.6
July	21	. .			8.06	6.0
B. A. C. 6174.						
July	22	. .	18	6	21.78	7.0
A HERCULIS.						
Aug.	6	. .	18	6	37.96	5.0
15 SAGITTARII.						
Sept.	21	. .	18	6	51.84	
(*) — 18° 40′.						
July	9	. .	18	7	17.27	6.3
B. A. C. 6187.						
July	18	. .	18	8	9.04	7.2
	20	. .			9.03	6.5
Aug.	24	. .			8.90	6.5
LACAILLE 7646.						
May	3	. .	18	8	19.32	6.0
July	10	. .			19.40	6.7
Aug.	11	. .			19.22	7.0
(*) — 34° 11′.						
Aug.	11	. .	18	8	24.26	8.5
B. A. C. 6191.						
Aug.	15	. .	18	8	31.43	6.0
LACAILLE 7657.						
July	21	. .	18	9	10.84	6.2
B. A. C. 6194.						
July	22	. .	18	9	17.34	4.8
B. A. C. 6199.						
April	9	. .	18	10	1.84	6.5
July	20	. .			1.98	6.2
O. ARG. S. 18015.						
July	9	. .	18	10	29.92	7.2
40 DRACONIS.						
Feb.	9	S. P.	18	10	30.75	
O. ARG. S. 18017.						
July	9	. .	18	10	30.88	8.2
41 DRACONIS.						
Feb.	9	S. P.	18	10	37.05	

1863.		h. m. s.	Mag.
Lacaille 7661.			
May	3	18 10 53.59	6.5
	14	53.50	6.5
July	8	53.61	6.5
Aug.	11	53.52	6.5
δ Sagittarii.			
April	9	18 12 1.89	3.0
July	22	1.86	3.0
Sept.	21	1.87	
B. A. C. 6214.			
Aug.	15	18 12 30.66	
	24	30.54	6.5
B. A. C. 6222.			
May	14	18 13 33.72	6.5
η Serpentis.			
Feb.	13	18 14 3.89	
July	8	4.01	3.0
	20	4.04	2.8
	21	4.00	
	22	3.89	
Aug.	6	4.01	
(*) — 15° 9′.			
July	9	18 14 12.69	8.4
O. Arg. S. 18115.			
July	9	18 14 13.24	8.2
λ Sagittarii.			
Mar.	13	18 19 19.81	
April	9	19.74	
Sept.	20	19.81	
	21	19.76	
B. A. C. 6266.			
July	18	18 19 37.61	7.0
B. A. C. 6267.			
Aug.	11	18 19 46.25	6.7
B. A. C. 6273.			
Aug.	15	18 20 43.85	6.0
	24	43.77	6.3
B. A. C. 6274.			
May	14	18 20 48.42	7.0
Aug.	11	48.34	6.6
B. A. C. 6285.			
July	21	18 21 53.79	5.0
Lacaille 7757.			
Aug.	11	18 23 10.82	6.5
B. A. C. 6293.			
Aug.	6	18 23 11.55	
	8	11.55	6.7
(*) — 33° 1′.			
July	21	18 23 12.66	7.0
O. Arg. S. 18328.			
July	18	18 23 14.09	5.0
B. A. C. 6295.			
July	8	18 23 19.64	7.2
(*) — 33° 5′.			
Aug.	24	18 24 0.98	8.0
B. A. C. 6305.			
May	14	18 24 46.53	5.8
July	20	46.64	5.8
	21	46.74	7.0
Aug.	24	46.49	6.0
B. A. C. 6308.			
May	14	18 24 54.17	7.2
July	20	54.34	8.0
	21	54.18	5.5
Aug.	24	54.09	7.5
O. Arg. S. 18395.			
Aug.	11	18 25 53.01	8.0
B. A. C. 6317.			
May	14	18 26 15.92	6.7
July	20	16.07	7.7
1 Aquilæ.			
Feb.	13	18 27 35.33	
Mar.	31	35.30	
April	9	35.35	
May	3	35.34	
June	9	35.26	
July	9	35.38	4.5
	18	35.31	3.8
Aug.	6	35.33	
	8	35.26	
	10	35.28	
	11	35.31	
	24	35.27	
Sept.	21	35.21	
B. A. C. 6334.			
May	14	18 29 10.40	7.0
Bradley 2333.			
April	9	18 29 59.72	5.5
B. A. C. 6344.			
July	21	18 30 19.77	7.0
O. Arg. S. 18495.			
Sept.	21	18 30 32.18	7.5
B. A. C. 6346.			
July	9	18 30 32.30	7.0
Aug.	24	32.31	6.3
O. Arg. S. 18505.			
Aug.	10	18 31 9.62	8.5
(*) — 25° 36′.			
Aug.	10	18 31 13.01	8.6
O. Arg. S. 18506.			
Aug.	10	18 31 13.43	8.3
Lacaille 7815.			
May	14	18 31 20.99	7.0
Aug.	8	20.92	6.5
α Lyræ.			
Jan.	11	18 32 11.93	
	16	11.91	
Feb.	6	11.85	
	13	11.92	
Mar.	11	11.86	
June	3	11.86	
July	8	11.85	
	20	11.85	
Aug.	15	11.87	
Oct.	18	11.94	
	26	11.98	
	28	11.91	
Nov.	4	11.99	
	7	11.83	
	13	11.84	
	17	11.88	
	18	11.87	
	30	11.88	
Dec.	3	11.83	
	4	11.87	
	7	11.93	
	8	11.86	
	10	11.92	
	14	11.98	
	15	11.92	
	26	11.84	
Weisse XVIII, 793.			
Aug.	6	18 32 41.31	9.0
Lacaille 7823.			
Aug.	11	18 33 11.32	6.0
O. Arg. S. 18568.			
Sept.	21	18 34 16.72	7.3
Lacaille 7838.			
Aug.	11	18 35 54.90	6.4
Weisse XVIII, 887.			
Sept.	21	18 35 59.54	8.0
(*) — 1° 9′.			
Sept.	21	18 37 25.65	8.7
B. A. C. 6377.			
Aug.	24	18 37 52.30	
Lacaille 7858.			
Aug.	11	18 38 51.93	6.5
5 Aquilæ.			
Sept.	21	18 39 14.79	7.0
Weisse XVIII, 982.			
Sept.	21	18 39 16.02	7.7
O. Arg. S. 18672.			
Aug.	24	18 39 33.85	6.8
Lacaille 7865.			
July	20	18 39 58.77	
O. Arg. S. 18683.			
July	18	18 40 2.02	9.3
Brisbane 6501.			
Aug.	10	18 41 8.85	
29 Sagittarii.			
April	9	18 41 21.49	
Aug.	24	21.55	6.0
Lalande 34984.			
Sept.	21	18 42 11.45	7.0
Weisse XVIII, 1058.			
Sept.	21	18 42 12.53	8.2
O. Arg. S. 18735.			
July	9	18 42 25.46	6.2
B. A. C. 6408.			
Aug.	15	18 42 41.86	7.0
B. A. C. 6413.			
Aug.	8	18 43 43.29	5.5
O. Arg. S. 18765.			
July	18	18 43 43.68	6.0
Aug.	6	43.66	
Lacaille 7901.			
Aug.	11	18 44 21.98	6.6

β LYRÆ.

1863.		h.	m.	s.	Mag.
Feb.	6	18	44	54.63	
	12			54.71	
Mar.	31			54.66	
July	21			54.63	
Aug.	10			54.62	
Sept.	1			54.62	
Oct.	18			54.66	
	26			54.75	
Nov.	6			54.70	
	7			54.68	
Dec.	3			54.68	
	4			54.69	
	7			54.65	

COMP. β LYRÆ.

Sept.	1	18	44	56.43	

O. ARG. S. 18802.

Sept.	21	18	45	39.53	7.8

ν^1 SAGITTARII.

April	9	18	45	42.91	5.0
Aug.	24			42.94	

σ SAGITTARII.

Feb.	13	18	46	34.95	
July	9			34.93	
	18			34.97	4.0
Aug.	6			34.88	3.0
	19			34.95	
Oct.	18			34.93	

ν^2 SAGITTARII.

Aug.	24	18	46	39.19	

(*) −33° 28′.

Aug.	8	18	47	8.76	7.5

LACAILLE 7926.

Aug.	8	18	47	45.82	6.8

θ SERPENTIS, (1st star.)

Sept.	21	18	49	15.56	5.8

θ SERPENTIS, (2d star.)

Sept.	21	18	49	16.98	6.0

ξ^2 SAGITTARII.

April	9	18	49	22.57	4.0

WEISSE XVIII, 1276.

July	18	18	50	38.44	8.3
Aug.	19			38.34	9.0

RUMKER 6881.

July	21	18	50	41.83	7.3

B. A. C. 6474.

Aug.	24	18	51	12.38	7.3

WEISSE XVIII, 1294.

1863.		h.	m.	s.	Mag.
Aug.	11	18	51	28.02	7.5
	20			27.92	8.5

WEISSE XVIII, 1301.

Sept.	5	18	51	39.18	8.0

LACAILLE 7953.

Sept.	1	18	51	50.06	6.5

DORPAT 2425, (1st star.)

Sept.	5	18	52	57.35	8.0
	21			57.26	8.3

DORPAT 2425, (2d star.)

Sept.	5	18	52	57.44	8.2
	21			57.38	7.8

LACAILLE 7961.

Aug.	8	18	53	16.50	7.0

LACAILLE 7960.

Sept.	1	18	53	19.65	7.0

WEISSE XVIII, 1344.

July	18	18	53	30.45	9.0
	21			30.42	8.5

B. A. C. 6490.

Aug.	24	18	53	53.33	6.0

DORPAT 2434, (1st star.)

Sept.	5	18	55	31.76	8.1
	21			31.71	7.5

DORPAT 2434, (2d star.)

Sept.	5	18	55	32.86	

υ DRACONIS.

Aug.	22	18	56	6.11	

B. A C. 6505.

Aug.	24	18	56	9.87	7.0

LACAILLE 7985.

Aug.	8	18	56	27.51	6.9
Sept.	1			27.63	6.7

WEISSE XVIII, 1430.

Sept.	4	18	56	34.68	8.5

WEISSE XVIII, 1443.

Aug.	11	18	56	59.41	9.0
	20			59.30	9.0
Sept.	2			59.38	9.0

WEISSE XVIII, 1449.

1863.		h.	m.	s.	Mag.
Aug.	11	18	57	10.88	8.0
	20			10.88	8.0
Sept.	2			11.00	8.0
	4			11.02	8.0

B. Z. 299, 167.

July	21	18	57	41.96	6.5
Aug.	19			41.95	7.0

B. Z. 302, 3.

July	21	18	58	11.10	9.0
Aug.	19			11.11	9.0

τ SAGITTARII.

Oct.	18	18	58	11.85	

(*) +21° 1′.

Oct.	5	18	58	54.76	

ζ AQUILÆ.

April	11	18	58	58.52	
May	14			58.48	
June	3			58.54	
Aug.	17			58.58	
	20			58.46	
	24			58.56	
	27			58.42	

B. Z. 302, 4.

July	21	18	58	58.68	8.0

DORPAT 2447, (1st star.)

Sept.	5	18	59	20.07	9.0
	21			19.86	9.5

DORPAT 2447, (2d star.)

Sept.	5	18	59	20.23	7.5
	21			20.19	7.2

(*) −34° 0′.

Sept.	1	18	59	32.57	8.0

LACAILLE 7998.

July	18	18	59	33.50	7.2
Aug.	8			33.32	7.5
	11			33.31	
Sept.	1			33.51	7.3

(*) −0° 54′.

Sept.	4	18	59	57.49	9.2

B. A. C. 6540.

Sept.	2	19	0	16.72	6.5
	7			16.74	6.7

B. A. C. 6546.

Aug.	15	19	1	1.28	

O. ARG. S. 19145.

1863.		h.	m.	s.	Mag
Sept.	7	19	1	7.02	7.0

π SAGITTARII.

Aug.	24	19	1	26.14	
Oct.	18			26.17	

B. A. C. 6549.

July	18	19	1	32.48	5.8
	21			32.52	6.0

B. A. C. 6554.

Aug.	8	19	2	26.39	6.0
	10			26.36	6.5
	19			26.39	6.0

LACAILLE 8023.

May	14	19	2	(37.25)	

O. ARG. N. 18967.

Aug.	11	19	3	9.92	8.2
Sept.	2			10.09	8.5
	4			9.82	8.5

O. ARG. N. 18980.

Aug.	11	19	3	47.36	8.0
	20			47.26	8.3
Sept.	2			47.76	8.3
	4			47.21	8.3

B. A. C. 6562.

Aug.	15	19	4	36.11	5.8
	24			36.11	6.0
Sept	4			36.04	6.5

B. A. C. 6565.

Aug.	17	19	5	15.35	6.5
Sept.	21			15.14	7.0

(*) — 29° 30′.

May	14	19	5	35.30	7.0
July	18			35.37	7.5
Aug.	8			35.17	7.5
	19			35.24	7.5
Sept.	1			35.38	8.0

B. A. C. 6568.

July	21	19	5	43.18	6.0
Aug.	10			42.98	6.3
	27			43.15	
Sept.	7			43.07	6.5

B. A. C. 6569.

May	14	19	5	49.10	6.6
July	18			49.20	7.0
Aug.	8			49.07	6.8
	19			49.08	7.0
Sept.	1			49.22	7.0

LACAILLE 8045.

Aug.	11	19	6	37.70	7.0

ψ SAGITTARII.

1863.			h.	m.	s.	Mag.
Aug.	24		19	6	57.14	6.2
Sept.	2				57.25	6.0

B. A. C. 6576.

Sept.	4		19	7	1.42	6.5
	5				1.27	6.7

LACAILLE 8051.

Aug.	11		19	7	23.85	6.0

B. A. C. 6578.

Aug.	17		19	7	35.16	6.3
	19				35.01	
	20				35.04	7.0
Sept.	7				35.05	6.8

O. ARG. S. 19314.

Oct.	5		19	8	0.63	7.3

LACAILLE 8060.

July	18		19	9	14.67	7.2
Aug.	8				14.58	7.2
	10				14.57	7.0
Sept.	1				14.71	6.7

d SAGITTARII.

Sept.	21		19	9	26.44	

LACAILLE 8066.

July	18		19	9	59.22	6.9
Aug.	8				59.13	7.0

WEISSE XIX, 224.

Sept.	7		19	10	7.36	7.2

LACAILLE 8064.

July	21		19	10	7.68	6.5

(*) — 23° 49′.

Oct.	5		19	10	49.37	7.0

ω AQUILÆ.

May	14		19	11	14.65	
June	3				14.66	
	4				14.66	
Aug.	11				14.72	
	15				14.58	
	17				14.61	
	19				14.62	
	20				14.67	
	24				14.62	
Sept.	2				14.75	
	4				14.69	6.5
	5				14.62	
	23				14.64	

DORPAT 2492.

Sept.	7		19	11	25.05	5.5

θ LYRÆ.

1863.			h.	m.	s.	Mag.
Aug.	6		19	11	30.47	4.5

WEISSE XIX, 277.

Sept.	5		19	12	9.35	8.5

LACAILLE 8077.

July	18		19	12	14.30	6.5
Aug.	8				14.17	5.8
	10				14.08	6.5
Sept.	1				14.23	6.0

DORPAT 2497, (1st star.)

Sept.	4		19	13	7.62	8.3

DORPAT 2497, (2d star.)

Sept.	4		19	13	7.75	7.8

ρ SAGITTARII.

June	3		19	13	32.97	
Aug.	24				33.08	4.0
Sept.	21				32.96	
Oct.	18				33.07	

κ CYGNI.

Aug.	6		19	13	52.06	

LACAILLE 8090.

July	18		19	14	36.00	6.8
	21				35.90	6.3
Aug.	8				35.87	6.5
	10				35.86	6.5
Sept.	1				36.04	6.5

O. ARG. S. 19451.

Sept.	2		19	14	37.25	9.5

DORPAT 2501, (1st star.)

Sept.	5		19	14	38.20	8.0
	7				38.29	7.5

DORPAT 2501, (2d star.)

Sept.	5		19	14	38.76	9.0
	7				38.86	9.0

O. ARG. S. 19459.

Oct.	5		19	14	52.32	8.7

O. ARG. S. 19465.

Oct.	5		19	15	0.08	8.8

B. A. C. 6628.

Aug.	19		19	15	46.27	5.8

O. ARG. S. 19502.

Sept.	2		19	16	32.07	9.3

χ^1 SAGITTARII.

1863.			h.	m.	s.	Mag.
Sept.	23		19	16	45.23	5.8

χ^2 SAGITTARII.

Sept.	23		19	16	51.90	7.5

χ^3 SAGITTARII.

Aug.	10		19	17	0.96	6.0
	15				0.98	5.5

O. ARG. S. 19516.

Aug.	24		19	17	12.93	9.8
Sept.	2				12.95	9.5
	4				12.89	9.0

B. A. C. 6639.

Aug.	11		19	18	5.30	5.8

GR. C. 1728.

Aug.	6		19	18	13.01	5.5

τ DRACONIS.

Feb.	25	S. P.	19	18	13.72	

δ AQUILÆ.

April	9		19	18	26.36	
June	4				26.39	
July	21				26.32	3.2
Aug.	8				26.35	
	19				26.33	
	22				26.38	
Sept.	1				26.30	
	7				26.32	
Oct.	5				26.30	
	18				26.35	

(*) — 26° 8′.

Sept.	4		19	18	47.55	9.2
	5				47.43	9.2

O. ARG. S. 19551.

Aug.	24		19	18	47.51	8.8
Sept.	4				47.60	8.2

O. ARG. S. 19588.

Aug.	24		19	20	13.64	8.5
Sept.	2				13.55	

O. ARG. S. 19591.

Sept.	2		19	20	18.36	9.0
	4				18.30	8.0

O. ARG. S. 19600.

Sept.	2		19	20	35.82	9.0

B. A. C. 6665.

Aug.	11		19	20	45.68	6.5

O. ARG. S. 19609.

1863.			h.	m.	s.	Mag.
June	3		19	21	2.59	9.0
Aug.	10				2.51	7.8
	17				2.64	9.0
Sept.	2				2.70	9.0
	23				2.65	9.0

B. A. C. 6666.

Aug.	15		19	21	12.35	5.8
	19				12.33	5.7

LACAILLE 8126.

Aug.	8		19	21	54.29	6.7

LACAILLE 8121.

Sept.	1		19	21	57.38	7.0

B. A. C. 6672.

Aug.	10		19	22	42.02	6.7
Sept.	5				42.01	7.7
	23				42.14	8.0

(*) — 23° 26′.

Oct.	5		19	23	16.49	7.5

ε AQUILÆ.

Aug.	6		19	23	20.50	5.0

B. A. C. 6680.

Aug.	11		19	23	33.58	6.0

B. A. C. 6682.

July	29		19	23	56.60	
Aug.	19				56.42	7.0
	24				56.45	6.5

B. A. C. 6685.

Aug.	15		19	24	17.71	7.0
Sept.	2				17.64	7.0

O. ARG. S. 19685.

Aug.	20		19	24	23.24	9.5
	27				23.44	9.0

LACAILLE 8138.

Sept.	1		19	24	31.97	6.0

O. ARG. S. 19695.

Aug.	10		19	25	17.30	9.0
	20				17.24	9.5
	27				17.48	9.0

(*) — 26° 25′.

Sept.	23		19	25	17.55	9.0

O. ARG. 19707.

Aug.	10		19	25	45.54	8.5
	20				45.46	9.0
	27				45.58	9.0
Sept.	4				45.52	8.3

1863.	h. m. s.	Mag.
(*) — 26° 25'.		
Sept. 23	19 25 45.73	8.5
O. ARG. S. 19713.		
Aug. 10	19 25 53.54	8.3
20	53.44	9.0
27	53.48	9.0
Sept. 4	53.57	8.5
(*) — 26° 25'.		
Sept. 23	19 25 53.70	9.0
B. A. C. 6694.		
Aug. 19	19 26 6.67	6.5
B. A. C. 6693.		
Aug. 11	19 26 7.98	6.8
Oct. 5	7.96	6.5
LACAILLE 8153.		
Sept. 5	19 26 36.84	7.5
μ AQUILÆ.		
Aug. 6	19 27 14.98	5.0
h^1 SAGITTARII.		
Aug. 15	19 27 31.41	5.5
Sept. 2	31.40	6.5
LACAILLE 8159.		
July 18	19 27 34.52	5.7
Aug. 8	34.47	6.0
LACAILLE 8158.		
Sept. 1	19 27 53.10	7.5
(*) — 41° 50'.		
Sept. 1	19 27 56.10	8.5
h^2 SAGITTARII.		
Aug. 17	19 28 11.16	6.0
19	11.05	6.0
(*) — 39° 3'.		
June 3	19 28 37.96	8.0
LACAILLE 8169.		
Aug. 8	19 28 57.95	5.8
11	57.95	6.5
WEISSE XIX, 722.		
Sept. 5	19 29 9.24	6.0
7	9.26	6.0

1863.	h. m. s.	Mag.
(*) — 24° 40'.		
Oct. 5	19 29 19.89	7.7
κ AQUILÆ.		
June 3	19 29 21.45	
July 18	21.45	5.0
Aug. 6	21.49	5.5
10	21.45	
15	21.52	
20	21.41	
Sept. 4	21.41	5.5
23	21.52	
LACAILLE 8170.		
Sept. 1	19 29 41.70	7.5
B. A. C. 6716.		
Aug. 19	19 30 11.66	7.2
27	11.81	6.0
53 SAGITTARII.		
Aug. 17	19 31 24.43	6.3
20	24.30	
Sept. 2	24.49	6.5
B. A. C. 6727.		
Aug. 17	19 31 41.93	5.9
20	41.94	
Sept. 2	41.99	6.2
B. A. C. 6730.		
Aug. 6	19 32 10.67	6.5
LACAILLE 8185.		
Aug. 10	19 32 30.10	6.5
11	30.09	6.5
θ CYGNI.		
Aug. 6	19 32 41.06	5.5
LACAILLE 8186.		
Sept. 4	19 32 55.19	6.3
5	54.96	7.0
LACAILLE 8191.		
Sept. 2	19 33 33.82	7.0
(*) — 32° 33'.		
June 3	19 33 37.51	
LACAILLE 8193.		
July 18	19 33 45.05	7.0
Sept. 23	45.14	7.0
B. A. C. 6738.		
Aug. 15	19 33 52.62	6.0
24	52.55	6.6

1863.	h. m. s.	Mag.
(*) — 23° 10'.		
Oct. 5	19 34 9.21	7.2
LACAILLE 8196.		
Sept. 2	19. 34 15.87	6.2
LACAILLE 8197.		
Sept. 1	19 34 45.69	6.5
4	45.61	6.3
(*) + 8° 3'.		
Aug. 11	19 35 54.68	9.2
DORPAT 2562, (1st star.)		
Aug. 11	19 35 58.17	9.0
19	58.17	9.2
27	58.07	9.0
Sept. 7	58.12	8.5
χ AQUILÆ.		
Aug. 6	19 35 58.80	6.0
DORPAT 2562, (2d star.)		
Aug. 11	19 35 59.96	8.3
17	59.83	8.0
19	59.91	8.0
27	59.81	7.7
Sept. 7	59.88	7.0
(*) — 43° 38'.		
Aug. 10	19 36 1.35	7.5
(*) — 23° 12'.		
Oct. 5	19 36 10.20	
9	10.29	8.0
B. A. C. 6755.		
July 18	19 37 4.95	5.3
21	4.93	5.0
LACAILLE 8209.		
Aug. 10	19 37 35.72	6.5
Sept. 1	35.76	7.0
LACAILLE 8214.		
July 18	19 37 39.23	7.2
21	39.06	7.2
Sept. 2	39.18	7.0
(*) — 43° 41'.		
Sept. 4	19 37 44.84	6.8
f SAGITTARII.		
June 3	19 38 11.42	
(*) — 29° 9'.		
Sept. 23	19 38 15.30	9.0

1863.	h. m. s.	Mag.
(*) — 28° 45'.		
Oct. 5	19 39 5.88	6.3
γ AQUILÆ.		
Feb. 6	19 39 36.20	
April 9	36.20	
11	36 19	
June 4	36.20	
Aug. 27	36.14	
Sept. 2	36.24	
7	36.19	
16	36.16	
Oct. 9	36.29	
Nov. 15	36.22	
O. ARG. S. 19978.		
Aug. 6	19 40 27.08	6.0
15	27.10	5.8
23	27.18	
B. A. C. 6778.		
Aug. 10	19 40 58.47	6.5
Sept. 1	58.57	7.3
4	58.61	7.0
LACAILLE 8237.		
Aug. 10	19 41 44.40	6.8
Sept. 4	44.58	7.0
O. ARG. N. 19614.		
Aug. 19	19 41 46.08	9.0
B. A. C. 6786.		
Sept. 2	19 41 46.69	7.0
LACAILLE 8238.		
July 18	19 41 52.91	7.5
21	52.95	7.5
B. A. C. 6792.		
Aug. 27	19 42 32.23	
Sept. 5	32.12	6.3
(*) — 38° 44'.		
June 3	19 42 34.86	
B. A. C. 6795.		
Aug. 8	19 43 3.87	6.5
15	3.93	7.3
Sept. 23	3.93	6.5
LACAILLE 8249.		
July 18	19 43 49.22	6.0
21	49.25	5.8
α AQUILÆ.		
Jan. 1	19 43 57.11	
3	57.06	
28	57.16	

α AQUILÆ—Continued.

1863.		h.	m.	s.	Mag.
April	9			57.14	
	11			57.10	
June	4			57.11	
July	1			57.10	
Sept.	16			57.12	
Nov.	15			57.10	
	20			57.15	
Dec.	2			57.10	
	3			57.14	
	4			57.12	
	7			57.21	
	8			57.16	
	10			57.07	
	15			57.09	
	24			57.07	
	26			57.11	
	30			57.13	

O. ARG. S. 20030.

Oct.	9	19	44	28.31	8.2
	19			28.29	8.0

LACAILLE 8253.

Sept.	2	19	44	57.20	7.5

ι SAGITTARII.

Aug.	10	19	45	35.44	4.5
Sept.	1			35.64	5.0
	4			35.62	4.0

B. A. C. 6814.

Aug.	8	19	45	54.39	6.0
Sept.	5			54.39	6.3
Oct.	5			54.37	6.8
	9			54.43	6.8

B. A. C. 6816.

July	18	19	46	6.41	5.5
Sept.	2			6.37	
	23			6.39	6.0

56 AQUILÆ.

Aug.	6	19	46	32.43	6.0
	19			32.40	6.0
Sept.	7			32.31	6.0

O. ARG. S. 20063.

Oct.	9	19	46	46.18	8.2

ω SAGITTARII.

Aug.	24	19	47	15.55	5.5

B. A. C. 6829.

Sept.	1	19	48	0.17	6.0

B. A. C. 6831.

Oct.	5	19	48	18.94	7.5

β AQUILÆ.

1863.		h.	m.	s.	Mag.
June	4	19	48	26.14	
Aug.	8			26.12	
	15			26.16	
	17			26.14	
Sept.	5			26.16	
	9			26.16	
Oct.	19			26.09	

ε DRACONIS.

April	1	19	48	38.00	
	10			37.36	

O. ARG. S. 20086.

Aug.	19	19	48	37.75	9.2

O. ARG. S. 20090.

Aug.	24	19	48	43.17	7.5

LACAILLE 8278.

July	18	19	48	58.98	7.0
	21			58.82	6.5
Sept.	4			58.83	6.0

O. ARG. S. 20101.

Aug.	19	19	48	59.62	9.0

(*) — 17° 27′.

Sept.	7	19	49	26.97	9.0

B. A. C. 6841.

Sept.	1	19	50	7.60	6.5

A SAGITTARII.

Aug.	24	19	50	25.03	5.8

LACAILLE 8287.

Sept.	2	19	50	25.78	6.5

B. A. C. 6844.

Aug.	10	19	50	41.69	6.0

LACAILLE 8296.

July	21	19	51	18.52	4.9
Sept.	5			18.56	6.0
	23			18.56	6.0

LACAILLE 8302.

July	18	19	51	44.80	6.8

B. A. C. 6854.

Aug.	15	19	51	55.76	6.5
	20			55.76	7.0
	27			55.83	6.5

B. A. C. 6864.

1863.		h.	m.	s.	Mag.
Aug.	6	19	53	4.47	5.9
	24			4.35	
Sept.	7			4.37	6.0

WEISSE XIX, 1319.

Oct.	5	19	53	15.08	7.3
	9			15.04	7.8

WEISSE XIX, 1320.

Oct.	9	19	53	16.35	9.3

LACAILLE 8307.

Aug.	10	19	53	34.05	7.0
Sept.	1			34.16	7.0

c SAGITTARII.

Aug.	15	19	54	2.70	5.2
	19			2.56	5.5
Sept.	9			2.71	6.0
	22			2.72	

LACAILLE 8313.

July	21	19	54	19.65	6.5

LACAILLE 8312.

Sept.	2	19	54	19.80	6.4
	23			19.78	6.5

B. A. C. 6878.

Aug.	6	19	55	26.29	6.5
	20			26.16	6.5
	24			26.15	6.8
Sept.	7			26.19	6.2
Oct.	5			26.28	6.3

B. A. C. 6877.

Aug.	8	19	55	26.43	5.5

LACAILLE 8326.

Sept.	2	19	56	5.96	6.8
	4			5.93	6.3
	23			5.89	6.7

B. A. C. 6887.

Sept.	5	19	56	38.13	7.0
	9			38.19	7.2
Oct.	9			38.21	7.0

B. A. C. 6888.

Aug.	15	19	56	39.22	7.0
	27			39.22	6.3
Sept.	1			39.20	6.5

τ AQUILÆ.

July	18	19	57	18.00	

B. A. C. 6899.

Aug.	20	19	58	40.99	6.5

O. ARG. S. 20309.

1863.		h.	m.	s.	Mag.
Aug.	11	20	4	22.98	8.2

DORPAT 2643.

Aug.	19	20	5	28.17	7.3
	20			28.25	7.3
Sept.	1			28.29	7.3
	5			28.25	

B. A. C. 6947.

Aug.	15	20	6	33.39	
Sept.	7			33.27	6.3
	9			33.46	6.2
	22			33.16	

B. A. C. 6948.

Aug.	24	20	7	8.21	
Sept.	2			8.20	6.4

LACAILLE 8385.

July	18	20	7	16.38	5.8
Sept.	4			16.40	6.2

LACAILLE 8387.

July	21	20	7	24.79	6.0

LACAILLE 8394.

Sept.	7	20	8	14.25	7.0

O. ARG. S 20370.

Aug.	10	20	9	44.56	8.3
	20			44.51	9.5

α¹ CAPRICORNI.

Aug.	15	20	9	53.06	
Sept.	5			53.09	
Oct.	9			53.13	

α² CAPRICORNI.

June	4	20	10	17.06	
July	18			16.99	
	21			17.07	
Aug.	6			16.98	
	8			17.05	
	11			17.08	
	15			16.99	
	17			17.04	
	26			17.05	
	27			17.03	
Sept.	1			17.03	
	5			17.00	
	9			17.06	
	16			17.03	
	22			17.06	
	23			17.07	
Oct.	5			17.11	
	9			17.02	
	19			17.08	
	21			17.01	

LACAILLE 8403.

Sept.	2	20	11	8.15	6.7

LACAILLE 8404.

Sept.	4	20	11	15.73	6.2

O. Arg. S. 20393.

1863.	h. m. s.	Mag.
Aug. 10	20 11 17.16	8.5
20	17.12	9.2

B. A. C. 6982.

1863.	h. m. s.	Mag.
Aug. 19	20 11 22.13	7.2
24	22.16	
Sept. 7	22.15	6.8

Lacaille 8414.

1863.	h. m. s.	Mag.
Aug. 17	20 12 21.29	7.0
Sept. 2	21.48	7.0
Oct. 19	21.46	7.0

O. Arg. S. 20429.

1863.	h. m. s.	Mag.
July 21	20 13 11.86	7.3
Aug. 11	11.85	7.8

O. Arg. S. 20443.

1863.	h. m. s.	Mag.
Oct. 19	20 14 23.36	7.8
21	23.30	8.5

Lacaille 8421.

1863.	h. m. s.	Mag.
Sept. 4	20 14 45.43	7.0

B. A. C. 7011.

1863.	h. m. s.	Mag.
Aug. 17	20 16 6.35	6.0
Sept. 1	6.47	6.5
7	6.26	6.3

B. A. C. 7012.

1863.	h. m. s.	Mag.
Aug. 19	20 16 11.57	6.8
20	11.55	6.5
26	11.56	6.0

O. Arg. S. 20469.

1863.	h. m. s.	Mag.
July 21	20 16 15.93	9.0
Aug. 8	15.88	9.0
10	15.79	9.0
11	15.89	

O. Arg. S. 20473.

1863.	h. m. s.	Mag.
July 21	20 16 25.05	9.0
Aug. 8	25.14	8.9
10	25.02	8.8
11	25.08	9.0

B. A. C. 7018.

1863.	h. m. s.	Mag.
Sept. 5	20 16 52.09	6.2
9	52.08	6.3

Lacaille 8432.

1863.	h. m. s.	Mag.
Sept. 2	20 17 3.75	7.2

B. A. C. 7021.

1863.	h. m. s.	Mag.
Aug. 27	20 17 21.17	7.0
Sept. 4	21.16	6.8

(*) — 22° 13′.

1863.	h. m. s.	Mag.
Oct. 9	20 17 22.38	9.0
19	22.41	

B. A. C. 7026.

1863.	h. m. s.	Mag.
Aug. 17	20 17 56.99	6.3
20	56.87	7.0
Sept. 1	57.08	6.5
7	56.94	6.8

O. Arg. S. 20502.

1863.	h. m. s.	Mag.
July 21	20 18 45.10	8.5
Aug. 8	45.12	8.5
10	45.05	8.5

B. A. C. 7030.

1863.	h. m. s.	Mag.
Sept. 9	20 18 54.03	7.2

B. A. C. 7033.

1863.	h. m. s.	Mag.
Sept. 5	20 19 29.59	7.1

B. A. C. 7034.

1863.	h. m. s.	Mag.
Oct. 9	20 19 37.42	7.2
19	37.37	7.0

Lacaille 8450.

1863.	h. m. s.	Mag.
Sept. 2	20 19 37.52	6.3

B. A. C. 7039.

1863.	h. m. s.	Mag.
Sept. 1	20 20 10.07	6.5
7	9.98	6.5

B. A. C. 7040.

1863.	h. m. s.	Mag.
Sept. 1	20 20 25.95	6.2
7	25.86	6.3
Oct. 21	25.87	7.2

ρ Capricorni.

1863.	h. m. s.	Mag.
June 4	20 20 52.29	
July 2	52.24	
Aug. 10	52.24	
11	52.23	
19	52.32	
20	52.28	
26	52.29	
27	52.31	
Sept. 4	52.25	
22	52.28	
23	52.28	
Oct. 19	52.30	
22	52.30	

B. A. C. 7049.

1863.	h. m. s.	Mag.
Sept. 5	20 21 18.16	6.5
9	18.14	6.5

B. A. C. 7057.

1863.	h. m. s.	Mag.
Aug. 17	20 22 21.91	5.8
Sept. 1	22.01	6.3
2	21.94	6.2

O. Arg. S. 20575.

1863.	h. m. s.	Mag.
Aug. 28	20 23 49.04	8.0
Sept. 1	49.22	8.0
Oct. 19	49.15	8.5

(*) — 25° 4′.

1863.	h. m. s.	Mag.
Aug. 10	20 23 58.46	7.0

O. Arg. S. 20578.

1863.	h. m. s.	Mag.
July 21	20 23 58.54	7.3
Aug. 8	58.45	7.0
11	58.48	7.0
20	58.47	7.2

Lacaille 8476.

1863.	h. m. s.	Mag.
Sept. 4	20 24 0.73	7.0
7	0.66	7.0
23	0.70	7.2
Oct. 21	0.63	

B. A. C. 7069.

1863.	h. m. s.	Mag.
Aug. 19	20 24 1.34	7.4
27	1.40	7.5
Sept. 5	1.39	7.7
9	1.37	7.5

B. A. C. 7070.

1863.	h. m. s.	Mag.
Aug. 19	20 24 3.51	7.7
27	3.63	7.7
Sept. 5	3.54	8.0
9	3.51	8.0

B. A. C. 7071.

1863.	h. m. s.	Mag.
Aug. 28	20 24 9.60	7.0
Sept. 1	9.61	7.0
Oct. 19	9.63	

B. A. C. 7077.

1863.	h. m. s.	Mag.
Aug. 17	20 24 31.87	6.0
20	31.75	6.3

B. A. C. 7081.

1863.	h. m. s.	Mag.
Aug. 24	20 25 19.89	
Sept. 9	20.01	7.2

Lacaille 8487.

1863.	h. m. s.	Mag.
Sept. 4	20 25 47.63	5.8

Lacaille 8492.

1863.	h. m. s.	Mag.
Aug. 11	20 26 8.78	6.0
Sept. 1	8.96	6.5
23	8.86	

ε Delphini.

1863.	h. m. s.	Mag.
Jan. 5	20 26 31.45	
July 21	31.37	
Aug. 8	31.43	
28	31.45	
Sept. 2	31.45	
5	31.43	
7	31.42	

B. A. C. 7093.

1863.	h. m. s.	Mag.
Aug. 17	20 27 27.95	6.5
19	27.95	7.0
20	27.87	6.6
24	27.86	6.5

Lacaille 8497.

1863.	h. m. s.	Mag.
Sept. 4	20 28 23.17	6.3

B. A. C. 7108.

1863.	h. m. s.	Mag.
Aug. 11	20 29 31.69	6.0
17	31.69	6.2
Sept. 9	31.70	6.5
16	31.74	

B. A. C. 7111.

1863.	h. m. s.	Mag.
Sept. 1	20 29 32.17	6.6
Oct. 5	32.04	7.2
19	32.05	7.0

B. A. C. 7113.

1863.	h. m. s.	Mag.
Aug. 20	20 29 47.33	6.5
24	47.30	6.5
27	47.38	6.3
28	47.38	6.3
Sept. 7	47.34	6.3
Oct. 21	47.49	7.0

B. A. C. 7124.

1863.	h. m. s.	Mag.
April 3 S. P.	20 30 35.93	

Lacaille 8517.

1863.	h. m. s.	Mag.
Aug. 10	20 31 32.22	5.5
11	32.18	5.5
Sept. 1	32.41	6.0

Lacaille 8512.

1863.	h. m. s.	Mag.
Sept. 4	20 31 38.85	5.8

B. A. C. 7128.

1863.	h. m. s.	Mag.
Aug. 17	20 31 51.59	6.5
Sept. 7	51.54	6.5

B. A. C. 7133.

1863.	h. m. s.	Mag.
Aug. 20	20 32 4.44	6.7
24	4.42	6.7
27	4.54	6.5
28	4.43	6.7
Sept. 9	4.48	6.9

B. A. C. 7135.

1863.	h. m. s.	Mag.
Sept. 16	20 32 8.52	6.7

Lacaille 8529.

1863.	h. m. s.	Mag.
Sept. 2	20 32 42.23	6.3

B. A. C. 7147.

1863.	h. m. s.	Mag.
Oct. 5	20 33 2.53	6.5
21	2.44	

(*) —26° 3′.

1863.		h. m.	s.	Mag.
Oct.	19	20 33	2.55	6.5

B. A. C. 7155.

Sept.	4	20 33	42.08	6.0

LACAILLE 8537.

Aug.	17	20 34	44.22	6.5
	19		44.19	6.2
Sept.	7		44.08	6.4

B. A. C. 7162.

Aug.	20	20 35	16.06	6.8
	24		16.05	6.5
	27		16.19	6.5
Sept.	9		16.07	6.5

LACAILLE 8539.

Aug.	10	20 35	23.28	6.7
Sept.	1		23.56	6.6
	2		23.41	7.0
Oct.	19		23.50	6.5

LACAILLE 8540.

Sept.	4	20 35	45.98	6.5

B. A. C. 7168.

Aug.	28	20 36	6.93	6.5
Sept.	16		6.94	6.5

α CYGNI.

Jan.	5	20 36	39.59	
	12		39.61	
Feb.	15		39.51	
	22		39.67	
July	2		39.67	
Sept.	24		39.51	
Dec.	15		39.55	

B. A. C. 7170.

Aug.	17	20 36	48.54	6.2
	19		48.41	6.0
Sept.	7		48.51	6.2

LACAILLE 8546.

Sept.	2	20 36	48.72	6.7

O. ARG. S. 20892.

Oct.	5	20 36	48.84	8.8
	19		48.77	8.3

O. ARG. S. 20805.

Aug.	11	20 37	4.32	7.3

(*) —27° 23′.

Sept.	16	20 37	4.36	9.0

LACAILLE 8549.

Aug.	10	20 37	22.84	6.0

ψ CAPRICORNI.

1863.		h. m.	s.	Mag.
Aug.	20	20 37	47.93	4.5
Sept.	22		47.82	

O. ARG. S. 20817.

Sept.	1	20 37	59.14	8.0
Oct.	5		59.00	8.5

B. A. C. 7180.

Aug.	11	20 38	3.23	6.0
Sept.	1		3.29	7.0
Oct.	5		3.29	8.0
	19		3.21	7.0
	21		3.35	8.0

(*) —27° 23′.

Aug.	28	20 38	4.12	9.0

B. A. C. 7181.

Aug.	28	20 38	4.21	7.0
Sept.	16		4.23	7.0

O. ARG. S. 20828.

Sept.	7	20 38	15.90	7.2

O. ARG. S. 20833.

Sept.	7	20 38	20.98	7.0

B. A. C. 7187.

Aug.	17	20 38	58.54	6.8
	19		58.56	

LACAILLE 8559.

Sept.	2	20 39	12.67	7.0
	4		12.69	6.8

ε AQUARII.

Aug.	27	20 40	5.58	

γ DELPHINI, (1st star.)

Sept.	24	20 40	8.95	

γ DELPHINI, (2d star.)

Sept.	24	20 40	9.88	

B. A. C. 7197.

Aug.	20	20 40	11.08	7.0
	24		11.12	6.6
Sept.	9		11.20	6.5

LACAILLE 8574.

Sept.	1	20 40	44.13	6.6

B. A. C. 7205.

Oct.	20	20 40	58.71	6.0

α MICROSCOPII.

1863.		h. m.	s.	Mag.
Aug.	10	20 41	12.72	5.0

B. A. C. 7210.

Aug.	28	20 41	41.42	7.2
Sept.	7		41.40	
	9		41.36	6.5
	16		41.42	7.0
Oct.	5		41.44	8.0

(*) —27° 53′.

Aug.	28	20 41	42.71	9.0
Sept.	16		42.67	9.0

LACAILLE 8585.

Oct.	19	20 42	0.91	6.8

B. A. C. 7216.

Aug.	11	20 42	14.62	6.3
	19		14.59	
	20		14.50	6.0
	24		14.57	6.3

LACAILLE 8586.

Sept.	2	20 42	28.49	6.7
	4		28.15	6.5

B. A. C. 7214.

Oct.	5	20 43	10.72	7.0

β MICROSCOPII.

Sept.	23	20 43	16.32	6.5

ω CAPRICORNI.

Aug.	28	20 43	27.54	5.0
Sept.	22		27.43	
Oct.	21		27.68	5.0

LACAILLE 8603.

Sept.	2	20 44	22.48	7.0
	4		22.32	7.0

LACAILLE 8608.

Oct.	19	20 44	34.13	6.9

B. A. C. 7237.

Aug.	20	20 44	48.08	5.5
Sept.	7		48.13	6.5
	9		48.09	6.3

μ AQUARII.

June	4	20 45	6.00	
Aug.	10		5.99	
	11		6.03	
	17		5.94	
	24		5.98	
	26		5.96	
	27		6.01	
Sept.	1		6.14	

μ AQUARII—Continued.

1863.		h. m.	s.	Mag.
Sept.	24	20 45	5.99	
	25		6.02	
	28		5.98	
Oct.	5		6.06	
	20		6.10	
	21		6.01	

LACAILLE 8616.

Sept.	16	20 45	42.39	6.5

B. A. C. 7244.

Aug.	19	20 45	47.48	6.6
	28		47.43	6.7

O. ARG. S. 20937.

Sept.	16	20 46	11.61	7.2

(*) —24° 46′.

Aug.	28	20 47	5.54	7.8

LACAILLE 8619.

Aug.	24	20 47	13.90	7.2
Sept.	7		13.94	7.0
	23		14.01	7.2
	25		13.89	7.2
Oct.	19		13.89	7.0

(*) —32° 1′.

Aug.	24	20 47	18.76	7.5
Sept.	7		18.79	7.2
	23		18.85	7.2
	25		18.87	7.0
Oct.	19		18.76	7.3

LACAILLE 8620.

Sept.	2	20 48	23.00	
	4		22.77	6.0

B. A. C. 7252.

Aug.	11	20 48	27.75	5.5
	19		27.88	6.0
	20		27.77	6.0
Sept.	9		27.81	6.2
	22		27.77	7.0

32 VULPECULÆ.

Aug.	17	20 48	35.62	
	26		35.62	
Sept.	1		35.69	
	16		35.62	
	24		35.65	
	28		35.48	
Oct.	21		35.55	

LACAILLE 8628.

Sept.	2	22 50	40.45	7.5

LACAILLE 8630.

Sept.	23	20 51	8.72	5.6
	25		8.85	6.0

1863.	h.	m.	s.	Mag.
Lacaille 8633.				
Aug. 28	20	52	5.38	7.7
Lacaille 8640.				
Sept. 1	20	52	35.42	7.0
7			35.31	6.8
O. Arg. S. 21030.				
Sept. 7	20	52	38.43	7.3
1 Piscis Australis.				
Aug. 24	20	52	41.63	5.5
Oct. 21			41.63	5.5
(*) — 43° 37′.				
Sept. 4	20	52	42.36	7.0
Lacaille 8638.				
Sept. 2	20	52	55.70	
(*) — 43° 34′.				
Sept. 2	20	53	0.71	
Lacaille 8647.				
Aug. 11	20	53	11.02	6.5
19			10.96	7.2
20			10.92	7.3
Sept. 16			11.01	6.7
22			11.05	8.0
B. A. C. 7287.				
Aug. 24	20	53	26.23	6.0
Sept. 9			26.26	6.5
15			26.29	6.0
B. A. C. 7286.				
Sept. 25	20	53	27.87	5.8
O. Arg. S. 21046.				
Sept. 28	20	54	0.34	8.5
B. A. C. 7292.				
Aug. 28	20	54	0.38	6.0
Sept. 23			0.51	5.5
25			0.62	
Lacaille 8658.				
Sept. 24	20	54	31.07	8.0
O. Arg. S. 21053.				
Sept. 28	20	54	47.41	7.7
Oct. 21			47.40	9.0

1863.	h.	m.	s.	Mag.
Lacaille 8660.				
Aug. 11	20	54	48.77	6.0
17			48.82	
19			48.85	5.7
Sept. 7			48.80	
B. A. C. 7300.				
Aug. 20	20	55	4.27	7.3
24			4.22	7.2
Sept. 9			4.29	7.0
16			4.25	7.0
Lacaille 8677.				
Sept. 23	20	57	11.83	7.5
25			12.02	7.0
δ Microscopii.				
Aug. 11	20	57	33.35	5.7
17			33.44	
19			33.42	5.5
Lacaille 8681.				
Sept. 2	20	57	36.67	6.5
(*) — 32° 54′.				
Sept. 1	20	57	36.79	7.3
2 Piscis Australis.				
Aug. 20	20	57	50.42	5.5
24			50.40	5.5
Sept. 7			50.45	6.0
O. Arg. S. 21106.				
Sept. 9	20	58	43.80	7.0
15			43.95	6.7
B. A. C. 7327.				
Sept. 9	20	58	55.61	6.7
15			55.75	6.4
22			55.68	7.3
A Capricorni.				
Aug. 20	20	58	55.94	5.5
28			56.02	5.5
Sept. 4			55.93	5.2
Lacaille 8691.				
Oct. 21	20	59	3.98	
Lacaille 8693.				
Sept. 2	20	59	51.06	6.6
Lacaille 8697.				
Aug. 20	21	0	25.89	6.5
Lacaille 8701.				
Aug. 17	21	0	36.66	

1863.	h.	m.	s.	Mag.
61 Cygni.				
Sept. 7	21	0	37.37	
(*) — 32° 54′.				
Sept. 1	21	0	50.59	6.0
B. A. C. 7340.				
Aug. 19	21	1	4.50	
Sept. 1			4.58	
28			4.54	7.8
Lacaille 8707.				
Aug. 24	21	1	40.97	6.5
28			41.04	6.4
Sept. 4			41.01	6.5
Lacaille 8706.				
Sept. 25	21	1	46.28	6.7
ν Aquarii.				
May 9	21	1	57.85	
Aug. 26			57.88	
27			57.79	
Sept. 23			57.89	4.5
24			57.88	
Oct. 20			57.96	
21			57.85	
B. A. C. 7347.				
Sept. 9	21	2	26.16	6.7
22			26.18	8.0
Lacaille 8722.				
Aug. 20	21	4	3.42	6.5
Sept. 2			3.52	7.0
3 Piscis Australis.				
Aug. 11	21	4	58.79	5.8
19			58.72	5.5
24			58.73	
Sept. 7			58.76	5.0
B. A. C. 7359.				
Sept. 9	21	5	8.77	7.0
28			8.85	7.3
Lacaille 8736.				
Sept. 23	21	5	36.14	7.0
Oct. 19			36.01	7.0
B. A. C. 7366.				
Aug. 27	21	6	32.94	7.3
ζ Cygni.				
Jan. 2	21	6	58.77	
June 5			58.75	
July 2			58.69	
Aug. 24			58.68	
26			58.67	

1863.	h.	m.	s.	Mag.
ζ Cygni—Continued.				
Aug. 28	21	6	58.74	
Sept. 2			58.71	
4			58.66	
7			58.65	
9			58.62	
22			58.65	
24			58.70	
25			58.70	
Oct. 20			58.71	
21			58.67	
May 9			58.63	
Aug. 11			58.68	
19			58.69	
Lacaille 8742.				
Aug. 20	21	7	3.07	6.0
Lacaille 8758.				
Sept. 23	21	9	0.17	6.6
25			0.23	6.7
28			0.27	6.6
Lacaille 8760.				
Aug. 20	21	9	1.78	6.7
4 Piscis Australis.				
Aug. 24	21	9	26.25	6.0
27			26.34	5.7
28			26.29	5.3
Oct. 19			26.32	4.5
Lacaille 8769.				
Aug. 11	21	10	37.37	6.0
19			37.37	6.0
Sept. 24			37.43	7.0
Lacaille 8776.				
Aug. 24	21	11	36.97	6.6
Sept. 2			37.06	6.2
7			36.95	6.5
28			36.95	6.5
Lacaille 8777.				
Aug. 27	21	11	39.31	6.5
28			39.33	6.5
Sept. 22			39.37	7.0
25			39.36	6.4
θ^1 Microscopii.				
Aug. 20	21	11	47.40	5.5
Lacaille 8787.				
Aug. 19	21	13	29.66	6.2
Sept. 2			29.97	6.2
16			29.78	7.0
22			29.91	7.0
Oct. 19			29.87	6.5
Lacaille 8790.				
Aug. 24	21	14	21.03	7.0
28			21.18	7.0
Sept. 7			21.10	6.7

[illegible]

Aug. [illegible] [illegible]

Lacaille [illegible].

Aug. [illegible] 21 16 [illegible]

B. A. C. [illegible]

Sept. [illegible] 21 16 [illegible] 4.1

[illegible]

[illegible]

ζ Piscium.

[illegible]

B. A. C. 7400.

Aug. [illegible] 21 16 [illegible]
Sept. 2 [illegible] 6.2
[illegible] [illegible] 6.2

B. A. C. 7403.

Aug. 10 21 16 6.12 7.2

B. A. C. 7408.

Aug. 28 21 16 14.77 6.6
Sept. 22 14.46 6.5

B. A. C. 7402.

Aug. 26 21 17 27.47 5.9

B. A. C. 7424.

Aug. 24 21 17 40.42 7.0
Sept. 3 40.57 6.5
28 40.64 7.0
29 40.50 6.7

13 Aquarii.

Oct. 20 21 17 41.50
21 41.45 6.0

B. A. C. 7426.

Sept. 1 21 17 44.75 6.4
7 44.66 6.0
28 44.66 6.7

B. A. C. 7442.

Aug. 27 21 18 2.53 6.8
28 2.47 7.0

[illegible]

Aug. [illegible] 21 [illegible] 2.0

[illegible]

Sept. [illegible] 21 [illegible]

Lacaille [illegible].

Aug. [illegible] 21 [illegible] 4.2
[illegible]
Sept. [illegible] 7.0

[illegible]

Oct. [illegible] 21 [illegible] 4.1

ζ Piscis Australis.

Aug. [illegible] . . 21 [illegible] 4.6
Sept. [illegible] . . 4.3
[illegible] . . 4.1
[illegible] . . 4.5
[illegible] . . 4.3

Lacaille [illegible].

Aug. [illegible] . . 21 21 [illegible] 7.5
Oct. [illegible] . . [illegible] 7.4

B. A. C. [illegible].

Sept. 22 . . 21 22 [illegible] 5.4
[illegible] . . [illegible] 7.0
Oct. [illegible] . . [illegible]

Lacaille [illegible].

Aug. 19 . . 21 22 [illegible] 6.5
[illegible] . . [illegible] 7.4
Sept. [illegible] . . [illegible] 6.6

ξ Aquarii.

Jan. 2 . . 21 24 11.19
3 . . 11.13
12 . . 11.36,
Mar. 1 . . 11.23
May 9 . . 11.13
June 5 . . 11.19
6 . . 11.29
July 2 . . 11.19
Aug. 11 . . 11.13
20 . . 11.20
24 . . 11.15
Sept. 1 . . 11.15
2 . . 11.19
15 . . 11.20
16 . . 11.17
23 . . 11.12
24 . . 11.20
Oct. 8 . . 11.04
19 . . 11.17
20 . . 11.17
21 . . 11.23
Nov. 2 . . 11.10
Dec. 15 . . 11.23

B. A. C. 7479.

Aug. 19 . . 21 24 28.85 6.0
28 28.91 6.5
Sept. 28 . . 28.86 7.0

[illegible]

Nov. [illegible] . . 21 [illegible] 7.5

Lacaille [illegible].

Sept. [illegible] . . 21 [illegible]

Lacaille [illegible].

Nov. 2 . . 21 [illegible] 4.1

[illegible]

July 2 . . 21 [illegible] 4.1

[illegible] Capricorni.

Jan. [illegible] . . 21 [illegible]
Mar. [illegible] . . [illegible]
May [illegible] . . [illegible]
Aug. [illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
Sept. [illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
[illegible] . . [illegible]
Dec. [illegible] . . [illegible]

B. A. C. 7492.

Aug. 19 . . 21 27 14.97 6.0
[illegible] . . 15.10 6.3
Sept. 16 . . 15.04 6.5

ι Piscis Australis.

Oct. 20 . . 21 28 3.55 6.3
21 . . 3.50 5.5

ε Capricorni.

Sept. 24 . . 21 29 14.17

Lacaille 8863.

Aug. 19 . . 21 30 6.53 7.0
Sept. 2 . . 6.64 6.5
16 . . 6.56 6.7
22 . . 6.45 8.0

Lacaille 8862.

Aug. 20 . . 21 30 9.41
Sept. 4 . . 9.41 6.6

ξ Aquarii.

June 5 . . 21 30 17.73
6 . . 17.77
July 2 . . 17.82
31 . . 17.84
Aug. 11 . . 17.82
24 . . 17.75
Sept. 7 . . 17.74
9 . . 17.83
15 . . 17.89
23 . . 17.71
Nov. 2 . . 17.69
17 . . 17.72

[illegible]—40° 10[illegible].

Sept. [illegible] . . 21 30 [illegible] 6.5

B. A. C. 7502.

Sept. [illegible] . . 21 30 56.40 7.5

Lacaille 8870.

Aug. [illegible] . . 21 30 57.90 6.3
Sept. 6 . . 58.18 6.5
[illegible] . . 57.90 7.0

Lacaille 8873.

Oct. [illegible] . . 21 32 1.90 7.5

[illegible] Capricorni.

Sept. [illegible] . . 21 32 19.84

[illegible]—35° [illegible].

Sept. 4 . . 21 33 17.96 6.0

Lacaille 8880.

Aug. 19 . . 21 33 44.29 6.5
25 . . 44.30 6.8
Sept. 2 . . 44.26 6.5
22 . . 44.32 6.7

Lacaille 8889.

Sept. 4 . . 21 33 52.00 6.3

Lacaille 8891.

Oct. 6 . . 21 33 56.65 8.0

Lacaille 8892.

Aug. 20 . . 21 34 0.45
Oct. 20 . . 0.61 7.7
21 . . 0.55 7.0

O. Arg. S. 21575.

Sept. 7 . . 21 34 4.09 7.0
16 . . 4.12 7.2

B. A. C. 7549.

Sept. 15 . . 21 35 21.30 7.2
24 . . 21.34 7.5
Nov. 2 . . 21.19 7.0

Lacaille 8902.

Aug. 19 . . 21 36 31.57 6.6
28 . . 31.58 6.7
Sept. 7 . . 31.54 6.6

ε Pegasi.

Jan. 3 . . 21 37 18.60
19 . . 18.69
Mar. 8 . . 18.57
29 . . 18.51
May 9 . . 18.59

ε Pegasi—Continued.

863.		h.	m.	s.	Mag.
y	10	21	37	18.55	
ne	4			(18.43)	
	6			18.52	
ly	31			18.54	
g.	20			18.54	
pt.	4			18.51	
	9			18.55	
v.	13			18.57	
c.	30			18.57	

Lacaille 8907.

pt.	16	21	37	20.82	6.5
t.	8			20.80	7.5
	21			20.82	

Lagaille 8906.

pt.	22	21	37	23.13	7.5
t.	20			23.24	8.3

B. A. C. 7562.

v.	17	21	37	27.13	

c^1 Capricorni.

v.	17	21	37	32.30	

Lacaille 8911.

pt.	28	21	38	4.58	6.4
v.	2			4.47	6.3

δ Capricorni.

ne	6	31	39	18.53	

θ Piscis Australis.

t.	6	21	39	30.71	5.7

Lacaille 8918.

g.	19	21	39	35.04	6.8
	28			35.10	7.0
pt.	4			34.96	6.5
	7			35.03	6.4

11 Cephei.

pt.	9	21	39	44.33	

Lacaille 8923.

pt.	16	21	40	7.52	6.5
	22			7.76	7.5
	24			7.52	8.0
	28			7.60	6.5
v.	13			7.55	7.0

Lacaille 8929.

t.	20	21	41	29.66	8.5
v.	2			29.28	7.0

Lacaille 8934.

pt.	4	21	41	48.77	6.3
v.	13			48.94	6.8

O. Arg. S. 21677.

1863.		h.	m.	s.	Mag.
Sept.	16	21	42	30.24	7.2

Lacaille 8937.

Aug.	19	21	42	40.45	6.7
	28			40.51	7.0
Sept.	7			40.51	6.8
	15			40.50	7.7
	22			(40.86)	7.3

Lacaille 8941.

Sept.	28	21	43	26.18	6.3
Oct.	6			26.32	7.2

Lacaille 8945.

Oct.	20	21	44	18.31	8.8

(*) — 19° 48′.

Nov.	2	21	44	20.47	8.7

Lacaille 8947.

Sept.	7	21	44	25.56	
	16			25.58	
Oct.	8			25.63	8.3

O. Arg. S. 21710.

Nov.	2	21	45	15.51	8.0
	13			15.57	8.0

μ Capricorni.

July	31	21	45	39.57	
Aug.	19			39.47	
	27			39.64	
	28			39.56	5.5
Sept.	4			39.49	4.0
	9			39.59	
	24			39.50	
	25			39.53	
	28			39.52	
Oct.	21			39.56	

Lacaille 8952.

Oct.	20	21	45	54.62	7.0

Lacaille 8965.

Sept.	7	21	47	45.21	
Oct.	19			45.19	

B. A. C. 7632.

Sept.	24	21	47	56.48	5.7
Oct.	6			56.62	6.0
Nov.	2			56.31	6.0
	13			56.43	6.0

Lacaille 8967.

Oct.	20	21	48	34.36	8.0

Lacaille 8968.

Aug.	27	21	49	2.08	6.5
	28			2.21	7.0
Sept.	15			2.29	8.0
	22			2.48	7.5

79 Draconis.

1863.		h.	m.	s.	Mag.
Sept.	16	21	51	7.65	

O. Arg. S. 21772.

Sept.	28	21	51	17.99	8.5
Oct.	17			18.05	8.2
Nov.	2			18.02	8.3
	13			18.15	8.0

Lacaille 8982.

Sept.	28	21	51	23.63	7.0
Oct.	19			23.54	7.0
Nov.	2			23.53	7.5
	13			23.65	7.0
	18			23.59	6.7

B. A. C. 7652.

Aug.	27	21	51	25.04	7.2
Sept.	7			25.06	6.5

Lacaille 8981.

Oct.	6	21	51	26.29	7.3
	8			26.26	7.5

11 Piscis Australis.

Aug.	28	21	51	32.79	6.6
Sept.	2			32.85	7.0

Lacaille 8985.

Oct.	20	21	51	45.30	7.2

Lacaille 8989.

Sept.	24	21	52	46.15	6.0

Lacaille 9000.

Sept.	7	21	54	22.53	6.3
Nov.	2			22.43	6.5

Lalaille 9003.

Aug.	27	21	54	41.69	7.0
	28			41.65	6.5
Sept.	2			41.61	6.6

Lacaille 9005.

Sept.	15	21	55	9.63	8.2
	22			9.80	7.7
	28			9.58	6.9
Oct.	12			9.71	7.5
Nov.	18			9.66	7.0

Lacaille 9004.

Oct.	8	21	55	10.86	8.0
	19			10.70	7.7
	20			10.77	7.5
Nov.	13			10.64	7.0

13 Piscis Australis.

Oct.	8	21	56	19.08	7.3
	19			19.00	6.2
Nov.	2			18.94	6.3
	13			19.02	6.5

Lacaille 9012.

1863.		h.	m.	s.	Mag.
Aug.	24	21	56	37.79	6.2

α Aquarii.

Jan.	3	21	58	35.52	
May	10			35.53	
June	6			35.43	
Sept.	2			35.45	
	7			35.52	
	15			35.50	
	16			35.54	
	22			35.55	
Oct.	12			35.52	
	17			35.51	
	20			35.52	
Nov.	18			35.51	
Dec.	15			35.45	

ι Aquarii.

Sept.	24	21	58	52.35	

B. A. C. 7694.

Nov.	2	21	59	26.66	6.5
	13			26.66	6.8

Lacaille 9027.

Aug.	28	21	59	45.23	6.9
Oct.	19			45.19	7.6

O. Arg. S. 21910.

Sept.	28	22	0	24.34	7.3
Oct.	12			24.29	7.6

Lacaille 9038.

Sept.	28	22	1	38.28	6.2
Oct.	8			38.45	7.0
	12			38.48	6.8
	17			36.42	7.8
	19			38.41	6.3
	20			38.48	7.3
Nov.	18			38.47	7.0

Lacaille 9036.

Aug.	1	22	1	44.36	5.5

B. A. C. 7715.

Aug.	27	22	2	0.77	
	28			0.78	6.0
Sept.	7			0.75	6.5
Nov.	13			0.75	6.8

Lacaille 9046.

Nov.	2	22	3	26.05	6.3

B. A. C. 7729.

Sept.	15	22	3	30.77	7.3
	24			30.78	6.5

Lacaille 9047.

Aug.	1	22	3	41.57	6.7

Lacaille 9058.

1863.		h.	m.	s.	Mag.
Aug.	27	22	4	3.66	6.0
Sept.	7			3.64	6.0
Oct.	17			3.68	7.0

B. A. C. 7739.

Sept.	24	22	4	41.35	7.0
Oct.	20			41.44	7.0

Lacaille 9058.

Oct.	19	22	5	3.67	6.0

B. A. C. 7745.

Aug.	29	22	5	52.06	5.8
Oct.	12			52.01	6.5
	13			52.13	7.0
Nov.	2			52.05	6.0

λ Piscis Australis.

Aug.	28	22	6	22.17	
Sept.	28			22.14	6.0
Nov.	4			22.17	
	13			22.19	6.2
	18			22.15	6.0

(*) — 32° 30′.

Nov.	2	22	7	52.61	8.5

Weisse 155.

Sept.	16	22	8	28.98	8.5

θ Aquarii.

July	31	22	9	26.59	
Aug.	1			26.66	
	27			26.55	
	28			26.62	
	29			26.59	
Sept.	7			26.65	
	26			26.57	
Oct.	13			26.63	
	21			26.59	
	22			26.63	
Nov.	2			26.62	
	13			26.68	
	18			26.60	

Lacaille 9088.

Nov.	2	22	9	34.66	7.2

Lacaille 9091.

Sept.	28	22	10	3.64	7.2

Lacaille 9093.

Sept.	15	22	10	26.07	7.5
Oct.	20			26.18	7.2

Lacaille 9097.

Oct.	17	22	11	24.72	7.0
	19			24.60	6.5
Nov.	3			24.73	6.7
	18			24.66	6.5

ρ Aquarii.

1863.		h.	m.	s.	Mag.
Nov.	4	22	12	49.75	

Lacaille 9109.

Nov.	2	22	14	5.89	7.0

γ Aquarii.

June	6	22	14	25.40	
	7			25.43	
July	31			25.50	
Aug.	1			25.46	
	28			25.50	
	29			25.49	
Oct.	21			25.51	
	22			25.42	

Lacaille 9113.

Sept.	15	22	15	21.19	8.5
Oct.	13			21.33	8.5
Nov.	13			21.19	6.8
	18			21.19	7.0

Weisse 306.

Sept.	16	22	15	23.14	9.5
Oct.	12			23.07	9.3

Lacaille 9119.

Sept.	28	22	16	21.12	6.2
Oct.	19			21.09	6.7

Lacaille 9126.

Sept.	24	22	16	49.11	7.7

Lacaille 9127.

Nov.	18	22	16	56.01	6.5

π Aquarii.

May	10	22	18	7.61	
Aug.	1			7.63	
Sept.	15			7.57	
Oct.	8			7.62	
	12			7.60	
	17			7.56	
Nov.	2			7.62	

Lacaille 9131.

Aug.	28	22	18	18.50	6.7
Oct.	19			18.49	7.0
Nov.	3			18.57	6.8

53 Aquarii, (1st star.)

Oct.	22	22	18	57.68	

53 Aquarii, (2d star.)

Oct.	22	22	18	58.17	

Lacaille 9135.

Sept.	24	22	19	50.44	7.0
	26			50.56	7.3
Nov.	4			50.37	6.8

(*) — 39° 49′.

1863.		h.	m.	s.	Mag.
Aug.	29	22	19	59.89	6.0
Sept.	28			59.99	7.0

B. A. C. 7826.

Sept.	28	22	20	26.11	5.2

Lacaille 9139.

Oct.	19	22	21	0.06	7.0

Lacaille 9142.

Sept.	15	22	21	6.62	7.5
Oct.	8			6.72	7.3

(*) — 29° 26′.

Aug.	28	22	21	32.38	8.2

Lacaille 9144.

Aug.	28	22	21	33.92	7.0
Oct.	13			34.03	8.0
Nov.	13			33.90	6.7
	18			33.79	6.7

ζ^1 Aquarii.

May	10	22	21	37.35	
July	31			37.37	

ζ^2 Aquarii.

May	10	22	21	37.43	
July	31			37.48	

Lacaille 9159.

Nov.	4	22	23	5.19	6.7

σ Aquarii.

Sept.	24	22	23	14.15	
Oct.	22			14.04	

β Piscis Australis.

Aug.	28	22	23	32.23	5.0
Oct.	12			32.09	6.0
Nov.	13			32.18	5.7
	18			32.08	5.7

(*) — 33° 1′.

Oct.	12	22	23	32.48	9.0
Nov.	13			32.58	8.0

Lacaille 9163.

Aug.	1	22	23	41.77	7.0
	29			41.77	5.8
Oct.	19			41.71	6.5

B. A. C. 7851.

Oct.	9	22	23	54.06	
Nov.	2			53.75	

Lacaille 9167.

1863.		h.	m.	s.	Mag.
Aug.	29	22	25	15.20	6.0
Oct.	19			15.23	6.7

Lacaille 9169.

Nov.	4	22	25	41.41	6.8

Lacaille 9172.

Oct.	13	22	26	9.48	8.7
Nov.	13			9.28	6.8

Lacaille 9175.

Aug.	1	22	26	26.99	7.1

O. Arg. S. 22237.

Sept.	28	22	27	5.37	8.0

Lacaille 9180.

Aug.	28	22	27	54.02	6.0
Sept.	15			54.00	7.0
	26			54.03	6.3

η Aquarii.

May	10	22	28	9.76	
July	31			9.67	
Aug.	1			9.70	
Sept.	16			9.66	
	28			9.73	
Oct.	8			9.70	
	9			9.66	
	22			9.63	
	26			9.62	
Nov.	18			9.68	

B. A. C. 7872.

Oct.	19	22	28	42.03	6.2
Nov.	2			41.83	6.5
	4			41.95	6.0

Piazzi XXII, 154.

Oct.	19	22	28	45.51	7.5
Nov.	2			45.50	7.7
	4			45.48	7.3

Weisse 602.

Oct.	12	22	29	15.32	8.5

B. A. C. 7881.

Feb.	4 S.P.	22	29	48.21	

Weisse 619.

Oct.	12	22	29	50.91	8.2

Lacaille 9190.

Nov.	13	22	30	5.30	7.0

Lacaille 9195.

Sept.	15	22	30	28.06	8.0
Oct.	8			28.10	7.7

κ Aquarii.

1863.		h.	m.	s.	Mag.
Aug.	28	22	30	30.26	5.2
Sept.	24			30.26	
Oct.	22			30.25	

Lacaille 9196.

Aug.	1	22	30	50.77	6.5

Lacaille 9197.

Oct.	26	22	30	56.27	6.4
Nov.	2			56.11	

Lacaille 9199.

Aug.	29	22	30	56.99	5.5
Sept.	26			57.14	6.5

B. A. C. 7891.

Oct.	13	22	31	56.24	7.5
Nov.	18			55.09	6.7

O. Arg. S. 22316.

Oct.	13	22	31	58.58	8.3
Nov.	18			58.33	7.2

B. A. C. 7895.

Sept.	28	22	32	32.99	5.8
Oct.	19			32.96	6.2
Nov.	4			32.98	6.0
	13			33.06	6.5

Lacaille 9208.

Oct.	8	22	33	24.43	7.5
	9			24.33	7.0
Nov.	2			24.32	6.8

Lacaille 9209.

Aug.	28	22	33	39.02	6.3
Sept.	26			39.20	7.7

ζ Pegasi.

April	9	22	34	28.83	
June	7			28.82	
Aug.	29			28.89	

Lalande 44373.

Oct.	17	22	34	37.67	7.8
Nov.	4			37.70	7.8

ρ Gruis.

Aug.	1	22	35	21.91	4.7
Oct.	26			22.00	4.5
Nov.	13			21.92	5.0

Lacaille 9221.

Aug.	28	22	35	25.15	6.6
Sept.	28			25.05	6.3
Oct.	9			25.02	
	19			25.09	6.5
Nov.	2			25.05	

65 Aquarii.

1863.		h.	m.	s.	Mag.
Oct.	17	22	35	39.13	7.0
Nov.	4			39.11	

20 Piscis Australis.

Aug.	29	22	37	51.15	6.0
Sept.	26			51.23	6.5
Oct.	22			51.15	
Nov.	18			51.23	6.5

Lacaille 9244.

Oct.	19	22	39	2.58	6.5

Lacaille 9242.

Aug.	1	22	39	2.78	7.0
Oct.	26			2.94	6.5
Nov.	13			2.90	7.0

Lacaille 9246.

Nov.	2	22	39	16.23	7.0

Lacaille 9248.

Sept.	28	22	39	27.34	6.0
Nov.	4			27.22	6.2

Lacaille 9252.

Nov.	18	22	40	6.94	7.0

Lacaille 9256.

Sept.	26	22	40	14.87	6.2
Oct.	9			14.72	
	17			14.72	6.5

Lacaille 9261.

Oct.	8	22	40	46.08	7.0
	13			46.13	8.5

Lacaille 9271.

Sept.	28	22	42	10.53	6.0
Oct.	19			10.50	6.2
Nov.	2			10.39	6.0
	4			10.40	6.0

τ^2 Aquarii.

Oct.	22	22	42	10.54	

Lacaille 9270.

Aug.	1	22	42	11.34	7.5
Oct.	26			11.64	7.0

21 Piscis Australis.

Oct.	9	22	43	37.18	6.2
	17			37.20	6.5
Nov.	13			37.27	6.5
	18			37.18	6.0

γ Piscis Australis.

Sept.	24	22	44	44.03	5.3
Nov.	2			43.91	5.0

Lacaille 9290.

1863.		h.	m.	s.	Mag.
Aug.	29	22	44	59.16	
Sept.	15			59.17	7.5

λ Aquarii.

Aug.	28	22	45	18.56	4.0
Sept.	26			18.63	
Oct.	6			18.56	
	13			18.61	
	19			18.46	
	26			18.47	
Nov.	4			18.49	

Lacaille 9296.

Nov.	13	22	46	41.84	7.0

Lacaille 9299.

Aug.	29	22	47	20.69	6.3
Oct.	17			20.70	6.7
	19			20.67	6.8

Lacaille 9298.

Aug.	1	22	47	22.80	6.0

1 Piscium.

Nov.	18	22	47	49.68	5.7

Lacaille 9301.

Oct.	9	22	48	7.13	6.0

δ Piscis Australis.

Nov.	2	22	48	10.90	5.7

(*) — 37° 26′.

Sept.	28	22	48	20.09	8.3

Lacaille 9307.

Aug.	28	22	48	36.37	6.0
Oct.	9			36.22	6.0

α Piscis Australis.

Jan.	12	22	49	54.42	
Feb.	2			54.36	
Mar.	29			54.51	
June	7			54.35	
Sept.	15			54.30	
Oct.	12			54.44	
	26			54.39	
Nov.	4			54.41	
	13			54.42	
Dec.	8			54.39	

Lacaille 9313.

Aug.	1	22	50	0.23	7.0

O. Arg. S. 22513.

Aug.	29	22	50	9.54	9.0

Lacaille 9315.

Aug.	29	22	50	9.70	6.5
Oct.	8			9.73	7.3

B. A. C 7998.

1863.		h.	m.	s.	Mag.
Oct.	17	22	50	46.62	6.2
Nov.	2			46.46	6.2
	18			46.64	6.0

B. A. C. 8002.

Aug.	28	22	51	55.82	6.0

Lacaille 9326.

Aug.	1	22	52	28.74	7.3

B. A. C. 8007.

Sept.	15	22	52	30.61	6.5
Oct.	8			30.67	6.7
	13			30.67	7.3
	26			30.64	6.5

Lacaille 9330.

Aug.	29	22	52	42.28	6.5
Nov.	4			42.34	7.0

Lacaille 9331.

Nov.	2	22	52	48.40	6.5
	13			48.50	6.5

O. Arg. S. 22544.

Aug.	29	22	52	49.25	8.0
Nov.	4			49.21	8.2

Lacaille 9336.

Dec.	8	22	53	51.01	7.2

Lacaille 9338.

Aug.	25	22	54	1.91	6.5
Sept.	28			1.92	6.5

Lacaille 9343.

Oct.	17	22	54	46.18	6.5
Nov.	18			46.26	6.2

B. A. C. 8026.

Sept.	26	22	55	22.46	

Lacaille 9357.

Aug.	29	22	56	2.59	6.0
Sept.	15			2.60	7.0

Lacaille 9356.

Aug.	28	22	56	4.53	6.3
Oct.	26			4.61	7.0
Nov.	2			4.47	6.5
	4			4.46	6.5

Lacaille 9359.

Oct.	8	22	57	15.42	7.3
	9			15.26	6.5
	17			15.27	6.7

LACAILLE 9361.

1863.		h.	m.	s.	Mag.
Oct.	13	22	57	43.58	8.7
Nov.	18			43.52	

a PEGASI.

Jan.	12	22	57	47.42	
	17			47.33	
	29			47.38	
	31			47.40	
Feb.	2			47.34	
	10			47.28	
Mar.	29			47.28	
June	6			47.29	
	7			47.37	
Nov.	13			47.35	
Dec.	16			47.28	

LALANDE 45137.

Sept.	28	22	57	48.09	6.0
Oct.	12			48.07	6.5

B. A. C. 8045.

Aug.	1	22	59	5.17	6.5
Nov.	2			5.07	5.5
	4			5.08	5.8

c^1 AQUARII.

Aug.	29	22	59	9.26	5.0
Sept.	15			9.30	6.0

LACAILLE 9373.

Oct.	17	22	59	20.13	6.5
	26			20.21	6.7

WEISSE 1276.

Sept.	28	23	1	0.78	9.0
Oct.	9			0.78	8.5
Nov.	2			0.89	8.5

LACAILLE 9379.

Oct.	12	23	1	21.08	6.5
	13			21.17	7.7

B. A. C. 8064.

Oct.	17	23	2	10.41	6.5
	19			10.49	6.2
	26			10.37	6.5

(*) — 20° 12′.

Nov.	4	23	2	53.86	9.5
	18			53.89	9.5

LACAILLE 9388.

Aug.	1	23	3	12.04	
	29			11.94	6.0

O. ARG. S. 22666.

Sept.	28	23	4	59.94	9.0
Oct.	9			59.91	9.0
	12			59.96	9.0
	17			59.91	8.5
	19			59.90	9.0
	26			59.92	8.5
Nov.	4			59.93	9.0
	18			59.96	9.0

O. ARG. S. 22670.

1863.		h.	m.	s.	Mag.
Sept.	28	23	5	11.13	9.0
Oct.	9			10.93	8.9
	12			11.05	9.0
	17			11.07	8.4
	19			11.11	9.0
	26			11.15	8.6
Nov.	4			11.08	9.0
	18			11.14	9.0

O. ARG. S. 22682.

Oct.	19	23	6	6.76	8.8

O. ARG. S. 22691.

Nov.	18	23	6	56.33	9.0

φ AQUARII.

Aug.	28	23	7	4.26	4.5
	29			4.18	
Oct.	22			4.18	

LALANDE 45473.

Dec.	8	23	7	7.88	9.0

LACAILLE 9411.

Oct.	17	23	7	50.51	6.6

LACAILLE 9414.

Oct.	9	23	8	10.07	7.0
	12			10.06	6.5

LACAILLE 9426.

Oct.	19	23	9	7.88	6.8
	26			7.89	6.8
Nov.	4			7.86	6.8

(*) — 30° 39′.

Oct.	9	23	9	17.00	8.0

γ PISCIUM.

June	8	23	9	54.55	
Aug.	29			54.55	
Sept.	26			54.51	
	28			54.49	
Oct.	8			54.49	
	13			54.40	
	17			54.52	5.0
	20			54.41	
	22			54.50	
Nov.	2			54.53	
	20			54.44	
Dec.	8			54.53	
	10			54.43	
	15			54.50	

γ SCULPTORIS.

Oct.	12	23	11	15.21	5.0

LACAILLE 9437.

Oct.	9	23	11	22.42	7.0

LACAILLE 9436.

Dec.	10	23	11	22.69	7.6

WEISSE 227.

1863.		h.	m.	s.	Mag.
Nov.	18	23	11	39.66	7.0

ψ^3 AQUARII.

Oct.	22	23	11	40.57	
Dec.	16			40.56	

LACAILLE 9440.

Oct.	19	23	11	45.21	6.5
	26			45.13	6.5
Nov.	4			45.11	6.5

LACAILLE 9444.

Nov.	2	23	12	8.04	7.0
	13			8.12	6.2

96 AQUARII.

Aug.	28	23	12	8.38	5.0
	29			8.29	

LACAILLE 9447.

Oct.	17	23	12	36.71	7.0
Dec.	10			36.94	7.5

b PISCIUM.

Sept.	25	23	13	12.74	

B. A. C. 8132.

Sept.	28	23	13	47.50	6.5
Oct.	9			47.48	
	12			47.46	6.0
	19			47.58	6.0

LACAILLE 9453.

Nov.	13	23	15	24.76	6.8

B. A. C. 8145.

Dec.	10	23	15	38.74	7.3

O. ARG. S. 22798.

Nov.	13	23	15	39.88	

LACAILLE 9458.

Oct.	12	23	16	14.08	7.2
	17			14.15	7.0
Nov.	2			14.07	

LACAILLE 9462.

Oct.	13	23	16	41.24	7.0
Dec.	8			41.30	6.7
	10			41.22	7.1

O. ARG. S. 22817.

Sept.	28	23	17	3.72	9.0
Oct.	19			3.73	9.0
	26			3.71	9.0

LACAILLE 9468.

Nov.	13	23	17	58.11	

LACAILLE 9473.

1863.		h.	m.	s.	Mag.
Oct.	12	23	18	45.01	7.0
	17			45.04	6.2
Nov.	2			45.00	6.5

B. A. C. 8167.

Dec.	8	23	19	12.36	6.8
	10			12.50	7.0

LACAILLE 9479.

Oct.	13	23	19	38.00	7.5
Nov.	4			37.84	

κ PISCIUM.

Aug.	1	23	19	45.32	
	29			45.34	
Sept.	25			45.38	
Oct.	9			45.32	

B. A. C. 8172.

Oct.	26	23	20	29.21	6.0
Nov.	13			29.13	6.5

LACAILLE 9489.

Aug.	1	23	21	1.31	
Oct.	17			1.34	
Nov.	2			1.27	6.5

B. A. C. 8184.

Sept.	25	23	22	17.87	6.0

LACAILLE 9497.

Dec.	10	23	22	54.07	7.3

LACAILLE 9496.

Oct.	17	23	23	2.95	7.0
	26			2.92	7.0

LACAILLE 9499.

Oct.	12	23	23	16.94	7.0
	13			17.02	7.5
Nov.	4			16.88	6.7

LACAILLE 9500.

Nov.	2	23	23	26.82	7.0
	13			27.00	7.3

LACAILLE 9508.

Oct.	19	23	24	33.02	6.6
Dec.	10			33.15	7.0

β SCULPTORIS.

Oct.	17	23	25	27.16	4.5
	26			27.15	4.5

O. ARG. S. 22897.

Nov.	4	23	25	45.80	8.0
Dec.	8			46.00	8.7

Lacaille 9516.

1863.			h.	m.	s.	Mag.
Oct.	19	. .	23	26	0.31	7.0
Nov.	2	. .			0.25	7.0
	13	. .			0.29	7.0

Lacaille 9519.

Dec.	10	. .	23	26	38.08	7.8

O. Arg. S. 22911.

Dec.	8	. .	23	27	17.77	9.1

Lacaille 9524.

Oct.	17	. .	23	27	26.82	6.8

B. A. C. 8213.

April	13	. .	23	27	49.19	
May	1	. .			51.07	
Sept.	25	. .			49.91	
Oct.	9	. .			50.69	
	12	. .			53.01	

Lacaille 9527.

Dec.	10	. .	23	28	16.77	7.2

Lacaille 9528.

Aug.	30	. .	23	28	36.86	6.3
Oct.	19	. .			36.61	7.0
	26	. .			36.55	6.8

Lacaille 9532.

Dec.	10	. .	23	29	19.83	7.4

Lacaille 9534.

Oct.	17	. .	23	29	40.81	6.5
Nov.	2	. .			40.81	6.5

Lacaille 9539.

Nov.	13	. .	23	30	31.05	7.0

Lacaille 9547.

Oct.	26	. .	23	32	26.92	6.7
Nov.	2	. .			26.71	
	4	. .			26.82	6.5

ι Piscium.

June	8	. .	23	32	45.03	
Aug.	1	. .			45.01	
	28	. .			45.02	4.2
	29	. .			45.03	
	30	.			45.13	
Sept.	25	. .			45.02	
Oct.	12	. .			(44.82)	
	19	. .			(44.84)	
Nov.	6	. .			44.92	
Dec.	10	. .			45.06	

Lacaille 9550.

Nov.	13	. .	23	33	5.52	7.0

γ Cephei.

1863.			h.	m.	s.	Mag.
April	27	S. P.	23	33	38.62	
May	1	S. P.			38.27	
Oct.	9	. .			37.96	

Lacaille 9555.

Dec.	10	. .	23	33	48.38	7.2

λ Piscium.

Aug.	29	. .	23	34	54.13	

Lacaille 9568.

Aug.	28	. .	23	35	42.32	6.5
Oct.	12	. .			42.36	7.0
Nov.	2	. .			42.35	

Lacaille 9567.

Oct.	17	. .	23	35	43.85	6.7
Nov.	4	. .			43.82	6.2

Lacaille 9570.

Aug.	30	. .	23	36	1.34	6.5
Oct.	19	. .			1.16	6.5

Lacaille 9576.

Nov.	6	. .	23	36	31.11	6.5
Dec.	10	. .			31.28	6.9

Lacaille 9579.

Aug.	28	. .	23	37	11.39	6.2
Sept.	25	. .			11.57	6.0
Nov.	2	. .			11.43	6.0
	13	. .			11.47	6.0

Lacaille 9583.

Oct.	17	. .	23	38	37.62	

O. Arg. S. 23036.

Oct.	8	. .	23	38	50.10	8.7
	13	. .			49.97	8.7
	26	. .			49.99	7.7
Dec.	4	. .			49.91	8.3

B. A. C. 8260.

Dec.	10	. .	23	39	7.13	7.7

Lacaille 9599.

Oct.	17	. .	23	40	9.74	
	19	. .			9.96	7.0

Weisse 809.

Sept.	25	. .	23	40	11.78	8.5

O. Arg. S. 23054.

Nov.	6	. .	23	41	2.69	8.0

δ Sculptoris.

1863.			h.	m.	s.	Mag.
Aug.	1	. .	23	41	37.66	
	28	. .			37.61	
	30	. .			(37.84)	4.5
Oct.	8	. .			37.70	
	13	. .			37.65	
	26	. .			37.64	
Nov.	18	. .			37.65	
Dec.	4	. .			37.70	

Lacaille 9605.

Nov.	6	. .	23	42	3.74	6.5
	13	. .			3.66	6.5

Lacaille 9606.

Dec.	8	. .	23	42	11.04	7.5
	10	. .			11.06	6.5

21 Piscium.

Oct.	12	. .	23	42	17.34	

Lacaille 9610.

Sept.	25	. .	23	42	34.17	6.3
Nov.	4	. .			34.04	6.5

Lacaille 9611.

Oct.	17	. .	23	42	56.29	
	19	. .			56.33	7.0

Lacaille 9619.

Aug.	28	. .	23	44	11.02	7.0
	30	. .			11.25	7.0

Lacaille 9625.

Oct.	26	. .	23	44	37.79	6.7

Lacaille 9630.

Nov.	6	. .	23	45	26.44	6.5
Dec.	4	. .			26.44	6.6

(*) — 23° 49′.

Nov.	18	. .	23	45	26.44	9.0

B. A. C. 8304.

Dec.	8	. .	23	46	6.28	6.6
	10	. .			6.32	6.0

Lacaille 9636.

Aug.	28	. .	23	46	28.82	6.5
Oct.	17	. .			28.81	6.5

Lacaille 9637.

Aug.	30	. .	23	46	42.87	7.2
Oct.	19	. .			42.76	6.7
Nov.	4	. .			42.67	6.7

B. A. C. 8308, (1st star.)

Nov.	6	. .	23	47	6.41	7.5
Dec.	7	. .			6.25	8.0

B. A. C. 8308, (2d star.)

1863.			h.	m.	s.	Mag.
Nov.	6	. .	23	47	6.93	7.0
Dec.	7	. .			7.01	7.0

O. Arg. S. 23170.

Oct.	12	. .	23	47	25.47	9.0
Nov.	18	. .			25.52	9.2
Dec.	4	. .			25.53	9.0

B. A. C. 8313.

Oct.	26	. .	23	48	1.85	6.3

Lacaille 9644.

Oct.	26	. .	23	48	1.96	6.7

B. A. C. 8314.

Feb.	6	S. P.	23	48	3.33	
May	1	S. P.			3.72	
	15	S. P.			3.42	

O. Arg. S. 23126.

Nov.	18	. .	23	48	34.68	

Lacaille 9652.

Aug.	28	. .	23	48	54.20	6.4
	30	. .			54.30	6.7
Oct.	17	. .			54.24	6.5
Nov.	13	. .			54.20	

Lacaille 9655.

Dec.	8	. .	23	49	17.00	6.8

Weisse 1002.

Nov.	4	. .	23	49	22.03	8.5

Lacaille 9659.

Nov.	6	. .	23	49	54.60	6.0

Lacaille 9663.

Oct.	19	. .	23	50	23.86	6.5

(*) — 30° 16′.

Aug.	28	. .	23	51	28.40	8.5
Oct.	17	. .			28.26	8.5

ω Piscium.

Jan.	12	. .	23	52	7.44	
	23	. .			7.37	
Aug.	2	. .			7.40	
	30	. .			7.42	5.0
Sept.	25	. .			7.45	
Oct.	12	. .			7.34	
Nov.	6	. .			7.44	
	13	. .			7.38	
Dec.	7	. .			7.44	
	8	. .			7.36	
	10	. .			7.49	

1863.			h. m. s.	Mag.
B. A. C. 8332.				
Aug.	28	. .	23 52 15.73	5.0
Oct.	17	. .	15.71	6.0
Nov.	18	. .	15.51	6.0
O. Arg. S. 23181.				
Dec.	4	. .	23 53 30.19	8.5
O. Arg. S. 23185.				
Oct.	19	. .	23 53 50.17	8.2
Nov.	4	. .	50.12	8.2
Dec.	4	. .	50.12	8.5
Lacaille 9695.				
Nov.	6	. .	23 54 10.27	6.5
	18	. .	10.12	6.5
Dec.	10	. .	(10.56)	7.0

1863.			h. m. s.	Mag.
Lacaille 9699.				
Oct.	26	. .	23 54 47.50	6.7
ζ Sculptoris.				
Aug.	28	. .	23 55 8.92	5.5
	30	. .	8.90	6.0
Oct.	17	. .	8.89	5.5
Lacaille 9701.				
Nov.	4	. .	23 55 56.71	6.0
	6	. .	56.85	6.5
Dec.	7	. .	56.86	
Lacaille 9702.				
Dec.	8	. .	23 55 59.83	8.8
	10	. .	59.98	7.2

1863.			h. m. s.	Mag.
Lacaille 9705.				
Oct.	19	. .	23 57 1.77	6.5
Lacaille 9706.				
Oct.	17	. .	23 57 9.98	6.0
	26	. .	10.06	6.3
Lacaille 9707.				
Oct.	17	. .	23 57 12.73	7.3
	26	. .	12.86	7.2
(*) — 33° 14′.				
Aug.	28	. .	23 57 42.01	6.5
Weisse 1183.				
Nov.	18	. .	23 57 53.18	7.0
Dec.	2	. .	53.07	7.3

1863.			h. m. s.	Mag.
Weisse 1186.				
Dec.	4	. .	23 57 59.53	8.4
Lacaille 9714.				
Aug.	28	. .	23 58 1.42	8.2
Lacaille 9722.				
Oct.	19	. .	23 59 5.25	7.0
	26	. .	5.33	7.0
Weisse 1209.				
Nov.	4	. .	23 59 8.57	8.0
	18	. .	8.61	8.0
Lacaille 9724.				
Dec.	8	. .	23 59 40.08	7.9

MEAN DECLINATIONS FOR 1860.0

OF

STARS OBSERVED

WITH THE

MURAL CIRCLE,

1863.

MEAN DECLINATIONS FOR 1860.0,

MURAL CIRCLE.

α Andromedæ, 0h. 1m. 9s.

		°	′	″
October	13	+28	19	3.62
November	13			2.32
December	1			1.10
	7			2.86
	8			1.71
	15			2.32

α Andromedæ, (Ref.)

December	1	+28	19	2.04
	7			2.05
	8			3.19
	15			3.41

β Cassiopeæ, 0h. 1m. 43s.

December	9	+58	22	38.94
	16			39.58

O. Arg. S. 47, 0h. 5m. 1s.

December	9	—18	42	57.78

O. Arg. S. 48, 0h. 5m. 7s.

December	14	—15	56	34.72

γ Pegasi, 0h. 6m. 2s.

October	6	+14	24	19.41
	13			19.05
	19			19.73
November	13			19.77

γ Pegasi, (Ref.)

October	19	+14	24	19.56

O. Arg. S. 122, 0h. 12m. 55s.

November	30	—18	28	37.89

d Piscium, 0h. 13m. 24s.

October	6	+ 7	24	47.77

Lacaille 118, 0h. 25m. 20s.

December	15	—25	25	12.58

Anonymous, 0h. 26m. 45s.

November	30	—39	27	23.96
December	7			23.01

13 Ceti, 0h. 28m. 2s.

		°	′	″
October	13	— 4	21	50.45
November	12			50.23

Anonymous, 0h. 29m. 48s.

December	15	—25	16	10.63

Anonymous, 0h. 29m. 52s.

December	15	—25	15	31.74

B. A. C. 161, 0h. 30m. 18s.

December	14	+ 2	22	6.89

Anonymous, 0h. 31m. 26s.

December	15	—25	25	59.53

Lacaille 157, 0h. 31m. 49s.

November	3	—25	52	38.62

B. A. C. 167, 0h. 31m. 55s.

December	14	+ 2	21	10.78

α Cassiopeæ, 0h. 32m. 35s.

November	4	+55	46	8.16
	13			8.98
December	1			8.66
	3			8.89
	5			9.47
	8			8.15
	10			8.78

α Cassiopeæ, (Ref.)

December	1	+55	46	7.71
	5			10.40
	8			8.16
	10			8.63

Anonymous, 0h. 32m. 52s.

November	3	—25	47	56.20

Anonymous, 0h. 34m. 36s.

November	3	—25	57	49.78

21 Cassiopeæ, 0h. 36m. 28s.

		°	′	″
December	16	+74	13	18.63

β Ceti, 0h. 36m. 34s.

October	13	—18	45	19.10
November	4			19.52
	12			20.38
	30			18.22

Lacaille 220, 0h. 41m. 45s.

November	30	—29	15	28.28
December	5			29.48

O. Arg. S. 443, 0h. 42m. 15s.

November	3	—24	5	33.66

Lacaille 224, 0h. 42m. 37s.

November	3	—24	7	31.10

Lacaille 234, 0h. 44m. 45s.

December	3	—39	17	25.52

Lacaille 238, 0h. 45m. 46s.

December	9	—24	46	6.91

Lacaille 241, 0h. 46m. 19s.

December	15	—25	32	22.40

Lacaille 252, 0h. 48m. 30s.

December	15	—25	25	8.38

Lacaille 256, 0h. 49m. 5s.

November	3	—28	32	6.55

O. Arg. S. 569, 0h. 53m. 42s.

November	30	—26	30	9.65
December	3			10.23

Lacaille 277, 0h. 54m. 43s.

December	1	—39	40	22.95

70 Piscium, 0h. 54m. 49s.

		°	′	″
November	7	+ 7	11	7.20
	12			6 13

ε Piscium, 0h. 55m. 41s.

November	4	+ 7	8	10.04
	7			9.26
	12			8.62
	13			9.52
December	9			8.69
	15			10.35

ε Piscium, (Ref.)

December	15	+ 7	8	8.98:

Lacaille 290, 0h. 56m. 29s.

December	7	—32	49	53.28

O. Arg. S. 596, 0h. 56m. 31s.

November	3	—28	37	58.23

Anonymous, 0h. 56m. 43s.

December	14	—24	33	48.44

Anonymous, 0h. 57m. 38s.

November	7	+ 7	8	37.71

O. Arg. S. 613–4, 0h. 58m. 42s.

December	3	—29	4	19.44

O. Arg. S. 644, 1h. 0m. 52s.

November	3	—28	28	17.10

e Piscium, 1h. 1m. 10s.

October	29	+ 4	54	29.66
December	8			29.71

O. Arg. S. 704, 1h. 7m. 36s.

November	30	—25	2	33.95

Polaris, 1h. 8m. 2s.

			° ′ ″
May	1	S. P.	+88 33 47.44
	8	. .	46.49
	11	. .	(44.52)
	14	. .	46.94
	15	. .	46.90
	16	S. P.	46.41
	17	. .	46.33
	18	. .	46.06
	19	S. P.	46.86
	21	S. P.	47.93
	22	S. P.	47.09
	23	S. P.	(49.73)
	28	S. P.	46.66
	28	. .	45.79
	29	S. P.	46.11
June	2	S. P.	48.79
September	5	S. P.	(50.06:)
	15	S. P.	(50.72:)
	21	S. P.	(49.89:)
	23	S. P.	(47.80:)
	24	S. P.	(47.39:)
	28	S. P.	47.94
October	3	S. P.	46.79
	6	S. P.	48.52
	9	S. P.	46.31
	12	S. P.	47.23
	16	S. P.	49.46
	19	S. P.	45.57
	21	. .	47.06
	21	S. P.	47.70
	26	. .	47.30
	27	S. P.	46.41
	28	. .	46.22
	28	S. P.	48.36
	29	. .	47.17
November	1	S. P.	47.46
	3	S. P.	46.84
	3	. .	45.57
	4	. .	48.17
	4	S. P.	47.19
	6	S. P.	48.31
	7	. .	46.30
	10	S. P.	47.41
	11	S. P.	48.48
	12	. .	47.38
	12	S. P.	47.09
	16	S. P.	47.85
	18	. .	48.68
	26	. .	47.91
December	9	. .	48.56
	10	. .	46.62
	15	. .	47.86

Polaris, (Ref.)

November	4	. .	88 33 48.24
	18	. .	46.97
December	3	. .	47.72
	9	. .	48.41

θ Ceti, 1h. 17m. 2s.

October	29	. .	— 8 54 23.89
November	12	. .	25.41

O. Arg. S. 818-9, 1h. 17m. 51s.

December	7	. .	—29 13 50.37

A Cassiopeæ, 1h. 20m. 52s.

May	22	S. P.	+69 32 28.97

B. A. C. 452, 1h. 23m. 49s.

October	28	. .	—26 55 53.95

η Piscium, 1h. 24m. 0s.

			° ′ ″
October	26	. .	+14 37 23.24
November	18	. .	21.98

η Piscium, (Ref.)

October	26	. .	+14 37 24.96

Lacaille 444, 1h. 26m. 39s.

December	7	. .	—24 53 31.04

Lacaille 456, 1h. 28m. 16s.

October	28	. .	—24 25 5.13

π Piscium, 1h. 29m. 41s.

October	29	. .	+11 25 29.48

ν Piscium, 1h. 34m. 9s.

October	26	. .	+ 4 46 42.70
December	3	. .	42.29
	9	. .	42.58

ν Piscium, (Ref.)

October	26	. .	+ 4 46 42.19
December	3	. .	40.27
	9	. .	41.85

o Piscium, 1h. 38m. 0s.

November	18	. .	+ 8 27 7.88

o Piscium, (Ref.)

November	18	. .	+ 8 27 6.00

Anonymous, 1h. 39m. 36s.

December	7	. .	—36 48 40.80

ε Cassiopeæ, 1h. 44m. 21s.

December	9	. .	+62 58 44.66

ε Cassiopeæ, (Ref.)

December	9	. .	+62 58 42.06

O. S. 1127, 1h. 45m. 1s.

December	7	. .	—16 20 29.13
	15	. .	29.28

β Arietis, 1h. 46m. 55s.

November	18	. .	+20 7 19.40
December	3	. .	19.86
	10	. .	19.47

β Arietis, (Ref.)

December	3	. .	+20 7 19.26
	10	. .	20.10

O. Arg. S. 1189, 1h. 50m. 39s.

			° ′ ″
December	7	. .	—18 21 41.72

50 Cassiopeæ, 1h. 51m. 33s.

May	21	S. P.	+71 44 28.19
	23	S. P.	29.93
December	30	. .	28.89

α Piscium, 1h. 54m. 49s.

October	6	.	+ 2 5 11.87

O. Arg. S. 1245, 1h. 55m. 8s.

December	9	. .	—26 18 37.46

α Arietis, 1h. 59m. 17s.

December	10	. .	+22 47 54.90

α Arietis, (Ref.)

December	10	. .	+22 47 55.52

Anonymous, 2h. 2m. 20s.

December	15	. .	—18 26 37.40

O. Arg. S. 1376, 2h. 4m. 54s.

December	15	. .	—18 24 12.76

ξ^1 Ceti, 2h. 5m. 40s.

December	30	. .	+ 8 11 17.95

ξ^1 Ceti, (Ref.)

December	30	. .	+ 8 11 16.47

Lalande 4410, 2h. 15m. 28s.

December	15	. .	—18 18 1.15

ι Cassiopeæ, 2h. 17m. 35s.

December	10	. .	+66 46 13.36
	30	. .	12.94

ι Cassiopeæ, (Ref.)

December	3	. .	+66 46 11.70
	10	. .	11.62
	30	. .	12.01

Lacaille 745, 2h. 22m. 9s.

December	23	. .	—34 26 23.36

σ Ceti, 2h. 25m. 28s.

December	9	. .	—15 51 39.76

Anonymous, 2h. 32m. 5s.

December	23	. .	—34 17 8.24

η Persei, 2h. 40m. 30s.

			° ′ ″
December	3	. .	+55 18 41.30:
	9	. .	41.07
	10	. .	41.05

η Persei, (Ref.)

December	3	. .	+55 18 40.19
	9	. .	(42.42:)
	10	. .	41.09

π Arietis, 2h. 41m. 29s.

November	18	. .	+16 52 47.45
December	30	. .	48.39

π Arietis, (Ref.)

November	18	. .	+16 52 47.31
December	30	. .	47.05

ρ^3 Arietis, 2h. 48m. 32s.

December	10	. .	+17 27 45.85

ε Arietis, 2h. 51m. 13s.

October	27	. .	+20 46 42.07:

O. Arg. S. 1930, 2h. 51m. 29s.

December	9	. .	—16 24 26.17

B. A. C. 979, 3h. 2m. 50s.

May	22	S. P.	+77 12 50.19

δ Arietis, 3h. 3m. 38s.

October	27	. .	+19 11 41.57

ζ Arietis, 3h. 6m. 52s.

December	30	. .	+20 31 23.49

α Persei, 3h. 14m. 21s.

December	29	. .	+49 21 34.18

α Persei, (Ref.)

December	29	. .	+49 21 33.16

ε Eridani, 3h. 26m. 20s.

October	28	. .	— 9 56 2.75

ε Eridani, (Ref.)

October	28	. .	— 9 56 1.84

23 Tauri, 3h. 38m. 1s.

October	27	. .	+23 30 29.58

η Tauri, 3h. 39m. 10s.

December	29	. .	+23 40 7.74

η Tauri, (Ref.)

		°	′	″
December	29 . .	+23	40	9.22

27 Tauri, 3h. 40m. 50s.

December	29 . .	+23	37	19.10

A 40 Pleiadum, 3h. 42m. 34s.

December	29 . .	+23	32	4.43

B. A. C. 1211, 3h. 46m. 47s.

October	28 . .	+80	18	14.82

A¹ Tauri, 3h. 56m. 25s.

October	27 . .	+21	41	46.66

Anonymous, 4h. 3m. 48s.

December	29 . .	—19	22	17.19

Anonymous, 4h. 17m. 31s.

December	29 . .	—25	42	46.65

Weisse 572, 4h. 27m. 18s.

December	29 . .	+ 0	6	54.08

15 Orionis, 5h. 1m. 41s.

November	26 . .	+15	24	56.09

κ Tauri, 5h. 10m. 52s.

November	26 . .	+21	56	54.54

115 Tauri, 5h. 19m. 0s.

November	26 . .	+17	50	18.38

129 Tauri, 5h. 38m. 43s.

November	26 . .	+15	45	53.16

1 Geminorum, 5h. 55m. 37s.

November	26 . .	+23	16	2.75

η Geminorum, 6h. 6m. 25s.

November	26 . .	+22	32	38.43

μ Geminorum, 6h. 14m. 29s.

November	26 . .	+22	34	54.83

γ Geminorum, 6h. 29m. 37s.

December	25 . .	+16	30	56.95

γ Geminorum, (Ref.)

December	25 . .	+16	30	55.75

51 (Hev.) Cephei, 6h. 33m. 38s.

		°	′	″
May	1 S. P.	+87	14	53.50
	22 S. P.			53.84
June	8 S. P.			54.72
	12 S. P.			54.93
July	22 S. P.			57.18
September	18 S. P.			(57.35)
	24 S. P.			(53.30)
October	9 S. P.			53.20
	12 S. P.			53.76
December	25 . .			53.27

Lacaille 2461, 6h. 43m. 52s.

December	25 . .	—23	59	48.13

Lacaille 2462, 6h. 43m. 58s.

December	25 . .	—23	55	42.85

O. Arg. N. 7681, 7h. 7m. 33s.

March	13 . .	+79	8	33.61

B. A. C. 2320, 7h. 10m. 12s.

September	26 S. P.	+89	0	21.16

α² Geminorum, 7h. 25m. 40s.

March	13 . .	+32	11	30.66

α Canis Minoris, 7h. 31m. 58s.

March	13 . .	+ 5	34	48.92

β Geminorum, 7h. 36m. 36s.

March	13 . .	+28	21	40.85

O. Arg. S. 7669, 7h. 49m. 54s.

March	13 . .	—29	58	59.77

Lacaille 3073, 7h. 50m. 52s.

March	13 . .	—29	59	58.68

Anonymous, 7h. 51m. 56s.

March	13 . .	—29	57	34.80

ρ Argus, 8h. 1m. 35s.

March	13 . .	—23	54	8.01

Lacaille 3192, 8h. 7m. 7s.

March	18 . .	—29	29	36.40

Lacaille 3266, 8h. 14m. 33s.

March	18 . .	—29	6	5.24

Lacaille 3356, 8h. 24m. 51s.

March	18 . .	—31	41	27.73

Lacaille 3449, 8h. 33m. 50s.

March	18 . .	—28	35	20.03

ε Hydræ, 8h. 39m. 22s.

		°	′	″
March	18 . .	+ 6	55	49.08

Lacaille 3567, 8h. 46m. 1s.

March	18 . .	—27	7	2.97

B. A. C. 3082, 8h. 55m. 7s.

March	18 . .	—26	6	52.42

1 (Hev.) Draconis, 9h. 16m. 48s.

September	7 S. P.	+81	56	(21.42)
	16 S. P.			(22.92)
October	28 S. P.			21.54
November	2 S. P.			21.12
	4 S. P.			20.40

1 (Hev.) Draconis, (Ref.)

October	28 S. P.	+81	56	20.06
November	2 S. P.			21.69
	4 S. P.			20.15

d Ursæ Majoris, 9h. 22m. 3s.

July	31 S. P.	+70	26	31.65

ε Leonis, 9h. 37m. 54s.

March	13 . .	+24	25	2.50

Lacaille 4046, 9h. 44m. 56s.

March	18 . .	—30	51	22.70

α Leonis, 10h. 0m. 55s.

March	18 . .	+12	39	1.17
September	21 . .			0.28
	22 . .			0.31
	23 . .			0.71
	27 . .			2.00

B. A. C. 3495, 10h. 8m. 40s.

October	28 S. P.	+84	57	33.09
November	2 S. P.			33.21

B. A. C. 3495, (Ref.)

November	2 S. P.	+84	57	32.71

γ¹ Leonis, 10h. 12m. 15s.

September	22 . .	+20	32	54.66

Lacaille 4267, 10h. 16m. 24s.

March	18 . .	—23	37	33.79

α Antliæ, 10h. 20m. 45s.

March	18 . .	—30	21	20.20

9 (Hev.) Draconis, 10h. 23m. 6s.

October	28 S. P.	+76	25	55.87
November	4 S. P.			53.76

9 (Hev.) Draconis, (Ref.)

		°	′	″
November	4 S. P.	+76	25	54.64

β Ursæ Majoris, 10h. 53m. 22s.

November	13 S. P.	+57	7	50.70
	18 S. P.			49.56
December	1 S. P.			54.56

α Ursæ Majoris, 10h. 55m. 3s.

September	21 . .	+62	30	23.07:
	22 . .			21.97:
October	11 . .			21.92
	28 S. P.			19.08
November	2 S. P.			21.06
	4 S. P.			20.17
	11 S. P.			18.81

δ Leonis, 11h. 6m. 40s.

October	8 . .	+21	17	25.04

λ Draconis, 11h. 23m. 3s.

October	9 S. P.	+70	6	11.83
December	3 S. P.			10.05

Lacaille 4749, 11h. 26m. 42s.

May	2 . .	—25	5	30.63

Lacaille 4761, 11h. 23m. 24s.

May	2 . .	—25	1	37.41

γ Ursæ Majoris, 11h. 46m. 27s.

December	3 S. P.	+54	28	16.14
	7 S. P.			23.40
	9 S. P.			14.67

Lacaille 5015, 11h. 58m. 54s.

May	10 . .	—32	10	26.91
	15 . .			26.89

4 Draconis, 12h. 5m. 36s.

May	16 . .	+78	23	40.43
November	2 S. P.			39.32
December	16 S. P.			38.43

4 Draconis, (Ref.)

November	2 S. P.			40.85
December	3 S. P.			39.49

Lacaille 5067, 12h. 6m. 26s.

May	19 . .	—26	32	32.96

δ Ursæ Majoris, 12h. 8m. 29s.

December	7 S. P.	+57	48	36.77
	14 S. P.			38.19

Lacaille 5125, 12h. 15m. 43s.

May	15 . .	—24	5	43.07
	19 . .			43.39

6 CORVI, 12h. 16m. 4s.

		° ′ ″
May	15 . .	—24 3 46.45
	19 . .	45.31

WEISSE XII, 261, 12h. 16m. 35s.

May	16 . .	+12 41 51.14

κ DRACONIS, 12h. 27m. 29s.

May	16 . .	+70 33 38.17
December.	9 S. P.	35.08
	16 S. P.	37.44

B. A. C. 4253, 12h. 30m. 17s.

May	19 . .	—26 21 50.96
	21 . .	51.41

LACAILLE 5230, 12h. 31m. 58s.

May	15 . .	—28 45 59.03

B. A. C. 4262, 12h. 32m. 19s.

May	1 . .	—39 12 59.05

γ^1 VIRGINIS, 12h. 34m. 34s.

May	2 . .	— 0 40 48.94

B. A. C. 4278, 12h. 36m. 33s.

May	19 . .	—27 33 18.06
	21 . .	17.90

B. A. C. 4282, 12h. 37m. 50s.

May	9 . .	+44 52 10.71

LACAILLE 5282, 12h. 40m. 27s.

May	15 . .	—24 14 56.73

29 COMÆ, 12h. 41m. 53s.

May	16 . .	+14 53 16.06

LACAILLE 5304, 12h. 44m. 29s.

May	19 . .	—25 58 36.65
	21 . .	35.82

38 VIRGINIS, 12h. 46m. 1s.

May	2 . .	— 2 47 29.62

B. A. C. 4339, 12h. 47m. 57s.

December	8 S. P.	+84 10 43.86

B. A. C. 4342, 12h. 48m. 5s.

November	13 S. P.	+84 10 24.61
December	3 S. P.	25.63
	8 S. P.	25.94

α CANUM VEN., (1,) 12h. 49m. 28s.

May	23 . .	+39 4 15.90
June	2 . .	15.98

α CANUM. VEN., (2,) 12h. 49m. 28s.

		° ′ ″
May	9 . .	+39 4 30.57
	15 . .	32.00
	23 . .	29.73
June	2 . .	30.53

LACAILLE 5364, 12h. 54m. 0s.

May	19 . .	—23 54 36.77

LACAILLE 5382, 12h. 56m. 48s.

May	1 . .	—27 39 4.47

LACAILLE 5387, 12h. 57m. 36s.

May	1 . .	—27 45 53.33

θ VIRGINIS, 13h. 2m. 42s.

May	2 . .	— 4 47 25.86
	23 . .	26.75

LACAILLE 5454, 13h. 6m. 51s.

May	15 . .	—23 32 28.35

α VIRGINIS, 13h. 17m. 49s.

May	21 . .	—10 25 45.18
	28 .	44.44
June	2 . .	45.75
September	5 . .	44.80

ζ URSÆ MAJORIS, 13h. 18m. 16s.

December	3 S. P.	+55 39 17.22

g URSÆ MAJORIS, 13h. 19m. 36s.

May	9 . .	+55 43 5.59

75 VIRGINIS, 13h. 25m. 23s.

May	9 . .	—14 38 29.84

ζ VIRGINIS, 13h. 27m. 34s.

May	21 . .	+ 0 7 17.06
	23 . .	16.36

B. A. C. 4541, 13h. 29m. 3s.

May	1 . .	—25 46 44.72

LACAILLE 5646, 13h. 33m. 40s.

May	1 . .	—25 44 0.99

m VIRGINIS, 13h. 34m. 16s.

May	9 . .	— 7 59 41.89

86 VIRGINIS, 13h. 38m. 29s.

June	9 . .	—11 43 24.52

η URSÆ MAJORIS, 13h. 42m. 1s.

		° ′ ″
May	9 . .	+50 0 47.56
	21 . .	47.57
	23 . .	47.30
	28 . .	48.88

η BOOTIS, 13h. 48m. 1s.

May	1 . .	+19 6 3.22
	2 . .	3.39
	19 . .	5.16
	21 . .	2.45
	23 . .	2.24
	28 . .	4.16

LACAILLE 5773, 13h. 50m. 9s.

June	9 . .	—25 18 47.26

11 BOOTIS, 13h. 54m. 49s.

May	9 . .	+28 3 50.65

LACAILLE 5819, 13h. 58m. 16s.

May	1 . .	—34 13 39.21
June	9 . .	38.60

θ CENTAURI, 13h. 58m. 28s.

May	15 . .	—35 40 46.16

94 VIRGINIS, 13h. 58m. 53s.

May	2 . .	— 8 13 17.03

LACAILLE 5824, 13h. 59m. 32s.

May	1 . .	—34 16 50.40

α DRACONIS, 14h. 0m. 36s.

May	9 . .	+65 2 43.76
	22 . .	45.17
	23 . .	44.03
	28 . .	45.91
December	1 . .	46.09
	3 S. P.	42.04
	23 S. P.	42.85

LACAILLE 5839, 14h. 2m. 40s.

May	19 . .	—31 24 43.72

LACAILLE 5843, 14h. 3m. 17s.

May	19 . .	—31 30 23.06

LACAILLE 5872, 14h. 8m. 1s.

June	9 . .	—32 35 16.92

α BOOTIS, 14h. 9m. 17s.

May	1 . .	+19 54 40.72
	4 . .	41.23
	9 . .	40.56
	18 . .	41.29
	19 . .	40.92
	22 . .	42.20
June	16 . .	42.15
November	6 . .	39.62
	12 . .	39.88

4 URSÆ MINORIS, 14h. 9m. 30s.

		° ′ ″
November	18 S. P.	+78 12 18.33
December	9 S. P.	18.35

4 URSÆ MINORIS, (Ref.)

December	9 S. P.	+78 12 18.46

LACAILLE 5883, 14h. 10m. 6s.

June	9 . .	—32 34 10.37

B. A. C. 4767, 14h. 16m. 50s.

June	16 . .	—24 10 4.58

52 HYDRÆ, 14h. 19m. 59s.

May	19 . .	—28 51 35.96

LACAILLE 5975, 14h. 23m. 41s.

May	15 . .	—31 33 45.86

LACAILLE 5988, 14h. 25m. 46s.

May	15 . .	—31 20 15.20

LACAILLE 5999, 14h. 27m. 40s.

June	9 . .	—38 58 57.91

5 URSÆ MINORIS, 14h. 27m. 54s.

May	21 . .	+76 19 5.62
	22 . .	5.42
	23 . .	4.54
	28 . .	6.26
June	16 . .	6.05
December	3 S. P.	3.95
	30 S. P.	5.98

5 URSÆ MINORIS, (Ref.)

November	18 S. P.	+76 19 3.89

O. ARG. N. 14695, 14h. 29m. 28s.

May	28 . .	+76 23 14.11

LACAILLE 6042, 14h. 32m. 18s.

May	9 . .	—25 39 0.68
	15 . .	0.86

LACAILLE 6047, 14h. 32m. 48s.

May	9 . .	—25 49 28.24
	15 . .	29.68

4 LIBRÆ, 14h. 35m. 8s.

June	16 . .	—24 23 51.80

μ VIRGINIS, 14h. 35m. 41s.

May	23 . .	— 5 2 51.18
June	4 . .	51.79

54 Hydræ, 14h. 37m. 54s.

June	9 . .	−24° 51′ 46″.27

ε Bootis, 14h. 38m. 52s.

May	11 . .	+27 39 59.88
	22 . .	59.32
	23 . .	58.66
	28 . .	60.49
September	21 . .	60.39
December	15 . .	59.45

Anonymous, 14h. 40m. 10s.

May	4 . .	−37 2 44.11

B. A. C. 4884, 14h. 40m. 23s.

June	9 . .	−24 55 21.42

μ Libræ, 14h. 41m. 39s.

June	4 . .	−13 33 47.76

8 Libræ, 14h. 42m. 57s.

May	9 . .	−15 24 44.90
	15 . .	44.15
	18 . .	43.29

α Libræ, 14h. 43m. 8s.

May	9 . .	−15 27 26.66
	11 . .	25.60
	15 . .	26.58
	18 . .	24.94

Anonymous, 14h. 45m. 17s.

May	4 . .	−37 2 55.45

B. A. C. 4910, 14h. 45m. 49s.

June	16 . .	−23 23 55.02

β Ursæ Minoris, 14h. 51m. 10s.

May	9 . .	+74 43 39.15
	11 . .	40.07
	15 . .	38.81
	18 . .	39.67
	22 . .	39.72
	23 . .	37.75
	28 . .	40.16
June	4 . .	39.99
	16 . .	39.69
September	21 . .	(39.78)
	26 . .	(39.69)
October	9 . .	40.31
	12 . .	40.79
November	4 . .	40.53
December	1 . .	39.14
	30 S. P.	39.34

Anonymous, 14h. 53m. 29s.

May	14 . .	−31 57 15.60

Anonymous, 14h. 56m. 8s.

May	4 . .	−37 8 17.58

Anonymous, 14h. 58m. 14s.

May	14 . .	−31° 54′ 19″.41

Lacaille 6237, 14h. 59m. 50s.

May	4 . .	−37 2 49.59

Lacaille 6239, 15h. 0m. 12s.

June	8 . .	−37 59 35.46

Anonymous, 15h. 0m. 54s.

May	14 . .	−31 57 7.76

B. A. C. 4985, 15h. 2m. 4s.

June	9 . .	−25 47 45.23

Anonymous, 15h. 2m. 34s.

May	4 . .	−36 58 12.89

Lacaille 6261, 15h. 3m. 53s.

May	4 . .	−36 59 28.20

Lacaille 6267, 15h. 5m. 17s.

June	8 . .	−37 57 49.17

Anonymous, 15h. 8m. 14s.

May	4 . .	−36 58 41.91

β Libræ, 15h. 9m. 29s.

May	30 . .	− 8 51 49.02
June	9 . .	48.86
September	26 . .	49.59
December	22 . .	48.35

Anonymous, 15h. 10m. 29s.

May	4 . .	−37 3 34.55

Lacaille 6329, 15h. 12m. 33s.

May	11 . .	−37 42 31.49

Anonymous, 15h. 12m. 54s.

May	4 . .	−37 2 22.03

Anonymous, 15h. 13m. 30s.

May	18 . .	−37 7 37.30

Anonymous, 15h. 14m. 40s.

May	14 . .	−31 48 34.22

Anonymous, 15h. 15m. 16s.

May	4 . .	−37 3 50.26

Anonymous, 15h. 16m. 34s.

June	1 . .	+55 49 25.71

Anonymous, 15 . 16m. 55s.

June	8 . .	+55° 49′ 42″.69

Anonymous, 15h. 16m. 57s.

May	4 . .	−36 59 7.18

11 Ursæ Minoris, 15h. 17m. 15s.

May	28 . .	+72 19 56.42
June	16 . .	53.33

Anonymous, 15h. 19m. 13s.

May	14 . .	−32 1 31.01

Lacaille 6382, 15h. 19m. 21s.

May	4 . .	−37 8 15.19

γ^{2} Ursæ Minoris, 15h. 21m. 0s.

May	28 . .	+72 19 56.08
June	16 . .	53.64

O. Arg. N. 15370, 15h. 21m. 20s.

June	1 . .	+51 5 11.34
	8 . .	12.83

Anonymous, 15h. 21m. 35s.

May	4 . .	−37 12 13.26

Anonymous, 15h. 21m. 46s.

May	14 . .	−31 49 0.99

Anonymous, 15h. 24m. 45s.

May	4 . .	−37 9 44.23

Anonymous, 15h. 26m. 33s.

May	14 . .	−31 56 33.81

α Coronæ Borealis, 15h. 28m. 46s.

May	28 . .	+27 11 17.66
October	9 . .	18.00
	12 . .	17.96

Radcliffe 3416, 15h. 31m. 4s.

June	1 . .	+40 15 55.28
	8 . .	56.66

B. A. C. 5171, 15h. 33m. 34s.

May	4 . .	−36 58 17.47

Lacaille 6495, 15h. 34m. 7s.

June	9 . .	−30 5 5.24

Anonymous, 15h. 36m. 22s.

June	9 . .	−30 14 22.63

α Serpentis, 15h. 37m. 22s.

June	1 . .	+ 6° 52′ 8″.10
October	9 . .	9.06
	12 . .	8.44

O. Arg. S. 14904, 15h. 40m. 43s.

June	12 . .	−18 58 43.13

ε Serpentis, 15h. 43m. 50s.

October	9 .	+ 4 54 7.98
	12 . .	7.67

47 Libræ, 15h. 46m. 55s.

June	1 . .	−18 57 57.17
	8 . .	55.46

ξ Lupi, 15h. 47m. 57s.

May	4 . .	−33 33 8.77

ζ Ursæ Minoris, 15h. 49m. 8s.

June	9 . .	+78 13 23.33

Weisse XV, 1057, 15h. 56m. 5s.

June	12 . .	+11 21 18.62

Weisse XV, 1080, 15h. 57m. 17s.

June	1 . .	+ 1 3 45.97
	8 . .	46.68

β Scorpii, 15h. 57m. 18s.

May	4 . .	−19 25 6.33
	14 . .	5.98
June	9 . .	7.15

θ Lupi, 15h. 57m. 24s.

May	11 . .	−36 24 30.31

Weisse XV, 1086, 15h. 57m. 27s.

June	12 . .	+ 6 24 1.82

Weisse XVI, 20, 16h. 2m. 32s.

June	1 . .	− 3 5 40.85
	8 . .	40.52

Weisse XVI, 38, 16h. 3m. 13s.

June	12 . .	−13 37 19.37
	17 . .	22.47

Weisse XVI, 111, 16h. 6m. 53s.

May	11 . .	−10 18 7.16
June	8 . .	5.97

δ Ophiuchi, 16h. 7m. 1s.

May	4 . .	− 3 19 49.38
	14 . .	48.98
June	9 . .	50.31
	30 . .	52.01
July	8 . .	50.11
	9 . .	50.55

19 SCORPII, 16h. 12m. 24s.

July 8 . . —23° 49′ 40″.88

LACAILLE 6796, 16h. 12m. 27s.

June 17 . . —32 55 5.73

LACAILLE 6797, 16h. 12m. 33s.

June 17 . . —32 53 46.07

σ SCORPII, 16h. 12m. 41s.

June 12 . . —25 15 9.49

LACAILLE 6815, 16h. 14m. 57s.

June 17 . . —32 52 1.45

B. A. C. 5465, 16h. 15m. 55s.

June 9 . . —26 49 16.69

α SCORPII, 16h. 20m. 50s.

May 14 . . —26 7 2.07
June 8 . . 1.31
12 . . 1.54
17 . . 3.16
30 . . 3.57
July 8 . . 2.74
9 . . 2.04

τ SCORPII, 16h. 27m. 11s.

July 8 . . —27 55 17.05

A DRACONIS, 16h. 28m. 17s.

June 30 . . +69 4 15.48
July 9 . . 13.41

LACAILLE 6910, 16h. 29m. 47s.

July 8 . . —36 55 51.02

ANONYMOUS, 16h. 30m. 0s.

July 20 . . —36 55 54.54

WEISSE XVI, 562, 16h. 30m. 3s.

May 11 . . + 0 14 32.57
14 . . 35.03

LACAILLE 6923, 16h. 31m. 28s.

July 8 . . —36 52 26.76

LACAILLE 6930, 16h. 32m. 58s.

July 18 . . —32 52 4.47

B. A. C. 5571, 16h. 33m. 9s.

June 12 . . —24 11 30.26

LACAILLE 6933, 16h. 33m. 10s.

July 8 . . —36 48 8.49
20 . . 10.41

WEISSE XVI, 637, 16h. 33m. 32s.

May 11 . . + 0° 7′ 23″.17
14 . . 25.34

B. A. C. 5595, 16h. 35m. 14s.

June 30 . —26 32 14.22

B. A. C. 5603, 16h. 36m. 17s.

June 12 . . —28 14 47.47

B. A. C. 5608, 16h. 37m. 11s.

June 30 . . —26 23 10.70

ANONYMOUS, 16h. 41m. 37s.

June 8 . . —30 0 24.90

20 OPHIUCHI, 16h. 42m. 5s.

July 9 . . —10 31 55.78

μ¹ SCORPII, 16h. 42m. 24s.

June 17 . . —37 48 11.02

μ² SCORPII, 16h. 42m. 52s.

June 17 . . —37 46 28.39

ANONYMOUS, 16h. 42m. 57s.

June 8 . . —30 5 10.08

ANONYMOUS, 16h. 43m. 28s.

July 20 . . —36 46 7.33

O. ARG. S. 16046, 16h. 44m. 13s.

June 8 . . —30 11 26.31

O. ARG. S. 16060, 16h. 44m. 49s.

June 8 . . —30 10 6.97

B. A. C. 5673, 16h. 45m. 51s.

June 30 . . —25 35 39.96
July 8 . . 36.42

O. ARG. S. 16082, 16h. 45m. 57s.

June 30 . . —25 34 45.43
July 8 . . 41.13

ANONYMOUS, 16h. 46m. 47s.

May 14 . . —36 57 25.23

B. A. C. 5687, 16h. 47m. 12s.

July 8 . . —25 23 27.84

ANONYMOUS, 16h. 47m. 16s.

June 8 . . —30 5 19.94

ANONYMOUS, 16h. 49m. 14s.

June 8 . . —29° 58′ 59″.42

ANONYMOUS, 16h. 49m. 43s.

June 8 . . —29 59 5.18

B. A. C. 5709, 16h. 51m. 25s.

June 12 . . —24 52 31.21

O. ARG. S. 16184, 16h. 51m. 30s.

June 8 . . —30 1 32.32

26 OPHIUCHI, 16h. 51m. 36s.

June 12 . . —24 46 14.81

ANONYMOUS, 16h. 52m. 33s.

May 14 . . —37 5 23.19

B. A. C. 5718, 16h. 52m. 50s.

July 21 . . —31 55 57.07

LACAILLE 7087, 16h. 52m. 51s.

July 18 . . —33 9 3.60

B. A. C. 5721, 16h. 53m. 24s.

July 21 . . —32 0 14.76

ANONYMOUS, 16h. 54m. 34s.

June 8 . . —29 55 53.78

ANONYMOUS, 16h. 55m. 27s.

July 8 . . —25 29 39.41

ANONYMOUS, 16h. 57m. 0s.

May 14 . . —36 54 7.96

O. ARG. S. 16352, 16h. 59m. 55s.

June 8 . . —26 38 53.25
17 . . 56.40

ε URSÆ MINORIS, 17h. 0m. 27s.

July 2 . . +82 15 39.52
9 . . 38.43
October 28 . . 42.30

η OPHIUCHI, 17h. 2m. 21s.

July 9 . . —15 32 52.30

O. ARG. S. 16420, 17h. 2m. 57s.

May 14 . . —26 31 24.10
June 8 . . 25.12

B. A. C. 5792, 17h. 3m. 39s.

June 17 . . —27° 35′ 6″.29

ANONYMOUS, 17h. 4m. 51s.

July 8 . . —35 7 58.96

B. A. C. 5796, 17h. 5m. 16s.

June 17 . . —27 37 35.38

O. ARG. S. 16505, 17h. 6m. 34s.

July 20 . . —26 21 56.31
22 . . 56.56

A¹ OPHIUCHI, 17h. 6m. 45s.

May 14 . . —26 23 38.01
July 20 . . 39.16
22 . . 39.53

A² OPHIUCHI, 17h. 6m. 45s.

June 8 . . —26 23 33.99

ANONYMOUS, 17h. 7m. 19s.

July 8 . . —35 19 51.38

B. A. C. 5813, 17h. 7m. 38s.

July 20 . . —26 20 28.83
22 . . 27.98

α HERCULIS, 17h. 8m. 16s.

May 17 . . +14 33 13.94
June 12 . . 11.14
15 . . 9.63
29 . . 12.44
July 2 . . 8.33
21 . . 13.47

ANONYMOUS, 17h. 8m. 28s.

July 8 . . —35 3 56.36

38 OPHIUCHI, 17h. 8m. 58s.

July 20 . . —26 28 14.03
22 . . 13.57

O. ARG. S. 16607, 17h. 11m. 22s.

July 22 . . —26 27 31.94

O. ARG. S. 16623, 17h. 11m. 52s.

July 20 . . —26 24 3.67
22 . . 4.17

ξ OPHIUCHI, 17h. 12m. 37s.

July 9 . . —20 57 32.50

O. ARG. S. 16664, 17h. 12m. 46s.

July 20 . . —26 21 17.91
22 . . 18.12

θ OPHIUCHI, 17h. 13m. 25s.

		°	′	″
July	9 . .	—24	51	20.75

ANONYMOUS, 17h. 13m. 28s.

July	8 . .	—35	12	7.63

ANONYMOUS, 17h. 13m. 44s.

July	8 . .	—35	14	14.19

LACAILLE 7244, 17h. 14m. 16s.

July	18 . .	—35	46	18.10

B. A. C. 5858, 17h. 14m. 33s.

July	21 . .	—24	57	34.74

ANONYMOUS, 17h. 15m. 18s.

July	8 . .	—35	14	58.63

B. A. C. 5861, 17h. 15m. 40s.

May	17 . .	—28	31	1.95

B. A. C. 5878, 17h. 18m. 16s.

June	15 . .	—25	48	53.21

ANONYMOUS, 17h. 19m. 33s.

July	8 . .	—35	4	56.16

ANONYMOUS, 17h. 22m. 16s.

July	8 . .	—35	4	37.74

c² OPHIUCHI, 17h. 22m. 53s.

August	10 . .	—23	51	1.32

ANONYMOUS, 17h. 28m. 10s.

July	8 . .	—35	14	27.18

α OPHIUCHI, 17h. 28m. 26s.

May	10 . .	+12	39	53.95
	14 . .			54.75
	17 . .			54.48
June	15 . .			56.55
	17 . .			53.46
July	1 . .			52.23
	2 . .			51.18
November	13 . .			54.94

B. A. C. 5946, 17h. 29m. 25s.

July	20 . .	—27	57	25.95

B. A. C. 5956, 17h. 30m. 28s.

July	21 . .	—29	52	27.83

ANONYMOUS, 17h. 30m. 32s.

July	8 . .	—35	8	4.46

ANONYMOUS, 17h. 31m. 22s.

		°	′	″
July	8 . .	—35	4	24.62

κ SCORPII, 17h. 32m. 53s.

July	18 . .	—38	57	41.90

ANONYMOUS, 17h. 34m. 5s.

July	8 . .	—35	13	31.18

B. A. C. 5981, 17h. 34m. 29s.

July	20 . .	—27	48	43.84

B. A. C. 5983, 17h. 34m. 35s.

June	17 . .	—30	6	17.30

ANONYMOUS, 17h. 35m. 59s.

July	8 . .	—35	7	24.02

ω DRACONIS, 17h. 37m. 46s.

July	9 . .	+68	49	20.70

ι¹ SCORPII, 17h. 37m. 48s.

May	17 . .	—40	4	3.88
July	15 . .			2.45

ANONYMOUS, 17h. 38m. 13s.

August	10 . .	—23	37	28.29
	19 . .			26.74

ι² SCORPII, 17h. 40m. 26s.

May	17 . .	—40	2	24.03

μ HERCULIS, 17h. 40m. 59s.

September	21 . .	+27	48	15.50:

B. A. C. 6023, 17h. 41m. 24s.

July	20 . .	—24	9	24.83
	22 . .			24.17

O. ARG. S. 17349, 17h. 46m. 52s.

August	10 . .	—26	54	5.87

4 SAGITTARII, 17h. 51m. 15s.

July	9 . .	—23	47	57.05

γ DRACONIS, 17h. 53m. 21s.

July	22 . .	+51	30	22.30
	24 . .			22.04

9 SAGITTARII, 17h. 55m. 17s.

July	9 . .	—24	21	33.68

γ² SAGITTARII, 17h. 56m. 49s.

		°	′	″
July	9 . .	—30	25	18.08

B. A. C. 6127, 17h. 59m. 13s.

July	15 . .	—28	28	5.08

LACAILLE 7598, 18h. 2m. 45s.

July	24 . .	—39	22	5.63

LACAILLE 7605, 18h. 3m. 16s.

July	24 . .	—39	11	2.95

μ SAGITTARII, 18h. 5m. 23s.

July	9 . .	—21	5	29.66
	20 . .			28.58
	22 . .			28.30
August	6 . .			27.53

LACAILLE 7629, 18h. 6m. 17s.

July	18 . .	—34	37	49.81

B. A. C. 6174, 18h. 6m. 22s.

July	21 .	—36	36	37.97

δ SAGITTARII, 18h. 12m. 2s.

July	9 . .	—29	52	59.79

ANONYMOUS, 18h. 13m. 40s.

July	24 . .	—26	28	38.83

η SERPENTIS, 18h. 14m. 4s.

September	24 . .	— 2	55	55.11

ANONYMOUS, 18h. 15m. 29s.

July	24 . .	—26	30	53.54

LACAILLE 7695, 18h. 15m. 58s.

June	17 . .	—36	3	44.46
July	20 . .			45.52

ANONYMOUS, 18h. 16m. 52s.

June	15 . .	—31	54	46.51

δ URSÆ MINORIS, 18h. 17m. 30s.

April	3 . .	+86	36	7.20
	5 . .			7.95
May	1 . .			8.04
	4 . .			8.02
	14 . .			8.77
	17 . .			7.59
June	12 . .			6.90
July	22 . .			5.27
September	5 . .			(7.50)
	15 . .			(6.89)
	16 . .			(8.43)

δ URSÆ MINORIS—Continued.

		°	′	″
September	17 . .	+86	36	(7.29)
	22 . .			(7.60)
October	9 . .			8.02
	12 . .			7.36
November	4 . .			8.70
	7 . .			8.56
	26 S. P.			7.17
December	25 S. P.			8.75

LACAILLE 7708, 18h. 17m. 58s.

June	17 . .	—36	5	32.78
July	20 . .			34.89

λ SAGITTARII, 18h. 19m. 20s.

July	9 . .	—25	29	42.55
August	8 . .			42.68
September	24 . .			40.41

B. A. C. 6271, 18h. 20m. 16s.

July	8 . .	—29	20	30.07

B. A. C. 6283, 18h. 21m. 41s.

July	18 . .	—28	52	58.99

B. A. C. 6295, 18h. 23m. 19s.

July	8 . .	—29	17	4.67

θ COR. AUSTRALIS, 18h. 23m. 31s.

July	21 . .	—42	24	30.05

B. A. C. 6305, 18h. 24m. 47s.

July	20 . .	—33	6	58.00

B. A. C. 6308, 18h. 24m. 54s.

July	20 . .	—33	3	39.64

B. A. C. 6317, 18h. 26m. 16s.

July	20 . .	—32	59	43.84

B. A. C. 6321, 18h. 27m. 3s.

August	15 . .	—29	48	19.36

1 AQUILÆ, 18h. 27m. 35s.

September	12 . .	— 8	20	19.05
	15 . .			17.80
	16 . .			18.78
	21 . .			19.52
	22 . .			18.78

B. A. C. 6331, 18h. 28m. 32s.

August	10 . .	—25	46	18.10
	17 . .			19.15

B. A. C. 6343, 18h. 30m. 0s.

July	15 . .	—23	37	10.21

α Lyræ, 18h. 32m. 12s.

March	11 . .	−38° 39′ 20″.71
	13 . .	21.25
April	3 . .	21.00
	5 . .	20.88
May	1 . .	20.60
	4 . .	20.58
	10 . .	20.72
	11 . .	21.08
	14 . .	21.79
	15 . .	21.49
	17 . .	21.59
	22 . .	21.76
June	8 . .	21.04
	12 . .	20.54
	17 . .	20.82
July	9 . .	20.38
	22 . .	19.54
August	3 . .	19.06
	17 . .	20.68
September	5 . .	(19.64)
	7 . .	(20.36)
	12 . .	(20.47)
	15 . .	(21.85)
	16 . .	(22.22)
	17 . .	(23.84)
	21 . .	(20.63)
	22 . .	(21.94)
October	9 . .	21.60
	12 . .	21.38
	17 . .	20.57
November	4 . .	21.48
	7 . .	22.09
	13 . .	22.09
December	3 . .	21.38
	8 . .	21.23
	26 . .	22.18

Lacaille 7823, 18h. 33m. 12s.

July	8 . .	−39 24 50.99

B. A. C. 6363, 18h. 35m. 14s.

July	8 . .	−39 49 17.83

Lacaille 7831, 18h. 35m. 17s.

July	8 . .	−39 52 45.63

B. A. C. 6369, 18h. 36m. 13s.

August	6 . .	−25 8 49.03

φ Sagittarii, 18h. 36m. 55s.

July	24 . .	−27 7 48.80

Lacaille 7860, 18h. 39m. 25s.

July	18 . .	−34 3 15.78
August	18 . .	17.64

B. A. C. 6396, 18h. 40m. 53s.

August	8 . .	−27 16 40.16

29 Sagittarii, 18h. 41m. 22s.

August	17 . .	−20 28 47.61

B. A. C. 6401, 18h. 41m. 55s.

August	11 . .	−26 55 32.25

B. A. C. 6408, 18h. 42m. 45s.

August	8 . .	−27° 19′ 20″.68

β Lyræ, 18h. 44m. 55s.

June	15 . .	+33 12 9.77
July	20 . .	8.62
August	17 . .	7.55
October	17 . .	8.36
November	13 . .	9.40

ν^1 Sagittarii, 18h. 45m. 43s.

July	24 . .	−22 54 45.41

B. A. C. 6439, 18h. 46m. 32s.

August	20 . .	−29 23 5.91

σ Sagittarii, 18h. 46m. 35s.

September	9 . .	−26 27 56.44

Lacaille 7932, 18h. 49m. 30s.

May	17 . .	−39 42 56.40

50 Draconis, 18h. 50m. 52s.

September	18 . .	+75 15 58.50

50 Draconis, (Ref.)

September	24 . .	+75 16 4.00

ζ Sagittarii, 18h. 53m. 50s.

May	17 . .	−30 4 33.21

B. A. C. 6490, 18h. 53m. 53s.

July	15 . .	−25 2 10.05

B. A. C. 6499, 18h. 55m. 25s.

August	6 . .	−31 14 53.01
	15 . .	52.27

γ Cor. Australis, 18h. 56m. 57s.

July	18 . .	−37 15 35.06

Anonymous, 18h. 58m. 17s.

August	31 . .	− 9 6 43.59

ζ Aquilæ, 18h. 58m. 58s.

July	21 . .	+13 39 29.80
August	17 . .	30.20
	18 . .	29.88
	19 . .	30.11
September	12 . .	(29.52)
	18 . .	(27.50)

B. A. C. 6533, 18h. 59m. 41s.

August	11 . .	−24 52 18.40

β Cor. Australis, 19h. 0m. 24s.

May	17 . .	−39° 33′ 29″.61

π Sagittarii, 19h. 1m. 26s.

September	23 . .	−21 14 32.35
	24 . .	31.18

B. A. C. 6565, 19h. 5m. 17s.

September	7 . .	−27 6 17.49

B. A. C. 6568, 19h. 5m. 41s.

September	26 . .	−30 3 57.47

ψ Sagittarii, 19h. 6m. 59s.

September	24 . .	−25 29 36.98

Lacaille 8049, 19h. 7m. 19s.

August	8 . .	−34 2 58.94

Anonymous, 19h. 8m. 57s.

September	7 . .	− 8 51 52.34

d Sagittarii, 19h. 9m. 26s.

September	12 . .	−19 11 53.63

B. A. C. 6604, 19h. 12m. 11s.

July	15 . .	−24 27 3.52

ρ^1 Sagittarii, 19h. 13m. 33s.

September	23 . .	−18 6 24.65
	24 . .	24.29

B. A. C. 6628, 19h. 15m. 46s.

August	11 . .	−28 7 54.98

χ^1 Sagittarii, 19h. 16m. 45s.

August	27 . .	−24 46 33.32

τ Draconis, 19h. 18m. 13s.

September	12 . .	+73 5 37.91:
October	12 . .	41.53

δ Aquilæ, 19h. 18m. 26s.

August	3 . .	+ 2 50 20.59
	6 . .	20.52
	10 . .	20.89
	15 . .	21.43
	17 . .	20.96
	18 . .	18.83
	19 . .	20.60
	20 . .	20.49
	31 . .	22.19
September	1 . .	18.43
	2 . .	20.89

Lacaille 8111, 19h. 19m. 30s.

September	7 . .	−36° 16′ 46″.04
	24 . .	48.22

B. A. C. 6672, 19h. 22m. 42s.

August	20 . .	−26 1 26.07
September	22 . .	23.47

Lacaille 8138, 19h. 24m. 46s.

July	18 . .	−40 19 49.96

B. A. C. 6694, 19h. 26m. 7s.

August	15 . .	−24 9 27.49

Lacaille 8153, 19h. 26m. 37s.

September	26 . .	−37 6 27.59

h^1 Sagittarii, 19h. 27m. 31s.

August	10 . .	−25 1 18.93
	17 . .	16.85

h^2 Sagittarii, 19h. 28m. 11s.

August	10 . .	−25 11 20.12
	17 . .	19.23

κ Aquilæ, 19h. 29m. 22s.

October	12 . .	− 7 20 6.33
	21 . .	6.31

Lacaille 8174, 19h. 30m. 25s.

May	17 . .	−39 44 44.97
August	28 . .	44.99
	31 . .	43.96
September	1 . .	43.28
	22 . .	(41.69)

53 Sagittarii, 19h. 31m. 25s.

September	24 . .	−23 44 31.53
	26 . .	31.95

B. A. C. 6727, 19h. 31m. 42s.

July	15 . .	−23 44 41.55
September	24 . .	42.44
	26 . .	42.87

Lacaille 8191, 19h. 33m. 36s.

October	9 . .	−37 45 47.77
	19 . .	46.07

Lacaille 8196, 19h. 34m. 17s.

October	9 . .	−37 52 21.57
	19 . .	20.32

Anonymous, 19h. 37m. 3s.

August	28 . .	−39 45 38.31
	31 . .	38.88

B. A. C. 6755, 19h. 37m. 5s.

August	10 . .	−32 14 31.88
	17 . .	30.77
	19 . .	31.14

Lacaille 8209, 19h. 37m. 38s.

September	24 . .	—43° 40′ 48″.42
	26 . .	47.16

Lacaille 8214, 19h. 37m. 39s.

August	10 . .	—32 16 16.57
	24 . .	15.97

B. A. C. 6768, 19h. 39m. 8s.

August	20 . .	—29 29 60.60
September	22 . .	59.21

γ Aquilæ, 19h. 39m. 36s.

August	6 . .	+10 16 29.38
	11 . .	28.62
	14 . .	27.62
September	2 . .	29.39
	15 .	(31.84)
	16 . .	(33.32)
	17 .	(31.78)
	23 . .	(29.05)
October	17 . .	31.13
	21 . .	30.09

Anonymous, 19h. 41m. 31s.

August	8 . .	—10 19 41.81

B. A. C. 6786, 19h. 41m. 47s.

August	15 . .	—27 3 50.58
	18 . .	48.59
	20 . .	47.88

B A. C. 6792, 19h. 42m. 32s.

October	12 . .	—27 49 20.83
	21 . .	20.47

Lacaille 8249, 19h. 43m. 50s.

September	15 . .	—32 19 49.97
	21 . .	51.88

α Aquilæ, 19h. 43m. 57s.

August	24 . .	+ 8 30 7.83
September	23 . .	7.24:
October	17 . .	8.57

B. A. C. 6816, 19h. 46m. 6s.

September	26 . .	—33 24 27.82
October	19 . .	28.10

ω Sagittarii, 19h. 47m. 15s.

August	6 . .	—26 40 1.06

Anonymous, 19h. 47m. 18s.

September	1 . .	—39 45 2.12

Anonymous, 19h. 47m. 56s.

August	28 . .	—39 45 1.53
	31 . .	1.45

B. A. C. 6829, 19h. 48m. 2s.

October	21 . .	—30° 56′ 13″.15
	26 . .	11.19

β Aquilæ, 19h. 48m. 26s.

July	18 . .	+ 6 3 34.23
August	11 . .	33.51
	14 . .	34.79
	27 . .	33.92
October	17 . .	36.54

ε Draconis, 19h. 48m. 38s.

September	7 . .	+69 54 41.10
	16 . .	40.65
	22 . .	40.51
	24 . .	42.52

O. S. 20096, 19h. 48m. 50s.

September	2 . .	—16 58 59.51
	15 . .	59.03
	21 . .	57.76

B. A. C. 6841, 19h. 50m. 7s.

October	26 . .	—30 54 33.49

A Sagittarii, 19h. 50m. 25s.

September	5 . .	—26 34 14.53

B. A. C. 6854, 19h. 51m. 4s.

August	15 . .	—28 57 54.38
	20 . .	54.31

B. A. C. 6864, 19h. 53m. 4s.

October	21 . .	—23 10 32.97

c Sagittarii, 19h. 54m. 3s.

September	23 . .	—28 5 42.05
	24 . .	41.81

Lacaille 8309, 19h. 54m. 15s.

August	28 . .	—39 14 14.25
	31 . .	11.54

Lacaille 8318, 19h. 54m. 46s.

July	18 . .	—40 19 49.96

B. A. C. 6878, 19h. 55m. 26s.

August	10 . .	—22 59 4.69
	17 . .	4.45

O. Arg. S. 20194, 19h. 55m. 50s.

September	3 . .	—28 8 9.70
	23 . .	8.38

B. A. C. 6887, 19h. 56m. 37s.

August	8 . .	—29 28 5.64
September	7 . .	1.97

τ Aquilæ, 19h. 57m. 18s.

September	22 . .	+ 6° 53′ 10″.07:
	26 . .	9.85:
October	9 . .	8.73

Anonymous, 19h. 58m. 27s.:

September	15 . .	—25 18 25.69

B. A. C 6899, 19h. 58m. 42s.

August	11 . .	—30 7 13.19

O. Arg. S. 20246, 19h. 59m. 19s.

August	31 . .	—24 16 53.08
September	1 . .	52.80

Anonymous, 19h 59m. 51s.

September	21 . .	—39 7 28.43

B. A. C. 6920, 20h. 1m. 40s.

August	10 . .	—25 41 26.11
	17 . .	24.83
	18 . .	24.07

O. Arg. S. 20287. 20h. 3m. 5s.

September	7 . .	—24 38 10.53
	15 . .	10.48

Weisse XX, 46, 20h. 3m. 35s.

September	2 . .	— 9 15 12.29
October	7 . .	12.14

O. Arg. S. 20297, 20h. 3m. 37s.

September	7 . .	—24 41 23.07
	15 . .	23.96

λ Ursæ Minoris, 20h. 3m. 54s.

August	14 . .	+88 53 21.45
	24 . .	22.33
September	16 . .	(24.62)
	22 . .	(25.85)
	24 . .	(26.36)
	26 . .	24.63
October	9 . .	25.55
	17 . .	26.27
	21 . .	23.47
	26 . .	24.65

Lacaille 8373, 20h. 4m. 43s.

September	23 . .	—34 32 4.67

B. A. C. 6947, 20h. 6m. 32s.

August	6 . .	—27 26 49.88
	15 . .	49.61

Lacaille 8385, 20h. 7m. 17s.

October	9 . .	—36 52 38.87
	21 . .	6.10

Anonymous, 20h. 7m. 51s.

September	21 . .	—39° 25′ 35″.39

Anonymous, 20h. 7m. 51s.

August	24 . .	—24 15 30.97
	28 . .	34.05
	31 . .	33.53
September	1 . .	33.37

Lacaille 8394, 20h. 8m. 16s.

September	5 . .	—31 37 55.06
October	19 . .	53.65

α^1 Capricorni, 20h. 9m. 53s.

August	10 . .	—12 56 14.77
	14 . .	15.08
September	26 . .	14.68
October	17 . .	14.99

α^2 Capricorni, 20h. 10m. 17s.

July	18 . .	—12 58 30.67
August	10 . .	32.37
	14 . .	31.62
September	16 . .	(30.88)
	26 . .	30.26
October	17 . .	31.74

O. Arg. S. 20384, 20h. 10m. 35s.

August	24 . .	—24 19 34.19
	28 . .	37.01
	31 . .	35.19
September	1 . .	36.90

Anonymous, 20h. 11m. 7s.

August	27 . .	—29 33 58.57

Lacaille 8403, 20h. 11m. 9s.

October	12 . .	—33 3 3.83
	21 . .	4.70

B. A. C. 6982, 20h. 11m. 24s.

August	17 . .	—25 39 25.42
	19 . .	26.70

O. Arg. S. 20398. 20h. 11m. 37s.

August	20 . .	—29 34 0.45

B. A. C. 6984, 20h. 11m. 44s.

September	3 . .	—29 37 59.57

Lacaille 8414, 20h. 12m. 22s.

September	23 . .	—33 10 32.66
October	21 . .	31.22

κ Cephei, 20h. 13m. 32s.

September	11 . .	+77 17 15.72
	24 . .	18.01
October	9 . .	17.44

κ Cephei, (Comp. *,) 20h. 13m. 32s.

September	24	+77°	17′	13″.57
October	9			13.70

Anonymous, 20h. 14m. 40s.

September	2	—25	25	54.60

B. A. C. 7011, 20h. 16m. 6s.

August	20	—29	31	27.06
	27			25.62

B. A. C. 7012, 20h. 16m. 11s.

August	11	—26	16	52.28
	17			51.22
	19			51.96

Lacaille 8439, 20h. 17m. 38s.

September	5	—32	46	53.12

B. A. C. 7026, 20h. 17m. 57s.

August	15	—29	31	31.80
	20			31.78
	27			29.51

π Capricorni, 20h. 19m. 17s.

September	15	—18	40	1.67
	16			2.31

B. A. C. 7034, 20h. 19m. 37s.

September	3	—26	3	55.43

B. A. C. 7036, 20h. 19m. 47s.

August	28	—36	3	15.64
	31			15.12

B. A. C. 7039, 20h. 20m. 9s.

October	17	—24	37	6.02
	21			6.23

ρ Capricorni, 20h. 20m. 52s.

September	23	—18	16	23.03

B. A. C. 7049, 20h. 21m. 18s.

August	10	—22	51	7.62
	14			8.81

B. A. C. 7057, 20h. 22m. 21s.

August	6	—29	34	39.25
	8			40.43

B. A. C. 7069, (1st star,) 20h. 24m. 2s.

August	17	—22	37	26.04
	19			27.15
Sentember	24			26.36
	26			26.68

B. A. C. 7069, (2d star,) 20h. 24m. 2s.

September	24	—22°	37′	51″.66
	26			52.59

B. A. C. 7071, 20h. 24m. 9s.

October	9	—29	3	55.42
	12			54.65

Lacaille 8476, 20h. 24m. 11s.

September	5	—31	51	7.60
	21			9.02

B. A. C. 7081, 20h. 25m. 20s.

August	24	—22	42	7.74
September	2			7.48
	24			8.35
	26			8.76

ε Delphini, 20h. 26m. 31s.

October	21	+10	49	47.93

B. A. C. 7093, 20h. 27m. 28s.

October	17	—27	15	13.24

Lacaille 8497, 20h. 28m. 26s.

October	26	—41	42	29.85
November	2			31.18

B. A. C. 7108, 20h. 29m. 31s.

August	11	—25	35	33.93
	15			34.02

B. A. C. 7111, 20h. 29m. 32s.

September	23	—22	55	38.99

B. A. C. 7113, 20h. 29m. 47s.

August	17	—24	42	45.18
	19			46.99

B. A. C. 7124, 20h. 30m. 35s.

July	31	+72	3	25.79
September	16			24.49
October	7			26.28
	9			25.42
	12			25.50

Lacaille 8513, 20h. 31m. 25s.

August	31	—36	17	18.78

Anonymous, 20h. 31m. 50s.

September	15	—16	43	57.16:

B. A. C. 7133, 20h. 32m. 3s.

August	17	—24	35	52.28
	19			51.81

B. A. C. 7135, 20h. 32m. 8s.

September	5	—28°	4′	41″.83
	7			40.04

B. A. C. 7136, 20h. 32m. 11s.

October	17	—27	8	8.82

B. A. C. 7139, 20h. 32m. 22s.

September	3	—29	2	28.07

B. A. C. 7162, 20h. 35m. 17s.

October	21	—22	57	7.95

Lacaille 8540, 20h. 35m. 47s.

August	31	—36	19	44.23

Anonymous, 20h. 36m. 20s.

August	28	—35	40	6.68

α Cygni, 20h. 36m. 40s.

September	22	+44	46	55.54
October	9			54.78

α Cygni, (Ref.)

November	2	+44	46	52.81

B. A. C. 7175, 20h. 37m. 12s.

September	26	—39	42	14.19

ψ Capricorni, 20h. 37m. 48s.

September	7	—25	46	13.14
	23			16.11
October	19			14.21

O. Arg. S. 20857, 20h. 40m. 17s.

September	15	—22	35	15.27

O. Arg. S. 20859, 20h. 40m. 19s.

September	2	—17	14	54.96
	24			54.94

B. A. C. 7203, 20h. 40m. 43s.

August	11	—27	52	57.15
September	5			56.45
October	17			58.18

O. Arg. S. 20884, 20h. 41m. 47s.

September	22	—22	24	34.75

B. A. C. 7216, 20h. 42m. 13s.

September	16	—25	29	45.22
	21			45.22

Anonymous, 20h. 43m. 2s.

August	28	—17°	48′	37″.37
	31			37.31
September	1			36.06
	4			37.13

Lacaille 8596, 20h. 43m. 12s.

August	6	—29	57	27.98
September	3			29.31

ω Capricorni, 20h. 43m. 27s.

July	31	—27	26	21.37

B. A. C. 7237, 20h. 44m. 48s.

August	15	—24	18	17.30
September	7			14.73

μ Aquarii, 20h. 45m. 6s.

October	9	— 9	30	20.34

O. Arg. S. 20951, 20h. 47m. 7s.

September	24	—15	48	40.95

Lacaille 8619, 20h. 47m. 15s.

September	23	—32	4	58.56

B. A. C. 7252, 20h. 48m. 28s.

September	5	—26	49	37.15
	16			37.92

Anonymous, 20h. 52m. 29s.

September	26	—35	43	8.10

76 Draconis, 20h. 52m. 29s.

November	2	+82	0	35.68

76 Draconis, (Ref.)

November	2	+82	0	35.04

Lacaille 8640, 20h. 52m. 36s.

November	6	—30	16	14.26

1 Piscis Australis, 20h. 52m. 42s.

September	7	—32	48	4.83
October	19			5.52

B. A. C. 7299, 20h. 53m. 49s.

September	21	+80	1	30.65
October	9			30.26
	12			(31.84)
	21			30.11

B. A. C. 7299, (Ref.)

October	12	+80	1	(34.10)
	21			31.37

B. A. C. 7300, 20h. 55m. 3s.

		°	′	″
September	5	−25	37	21.96
	16			24.06
	23			24.44

B. A. C. 7312, 20h. 57m. 0s.

August	28	−17	42	59.66
	31			59.08
September	3			58.79

LACAILLE 8681, 20h. 57m. 42s.

October	26	−35	11	3.07
	28			5.56

θ CAPRICORNI, 20h. 58m. 3s.

August	31	−17	47	10.95
September	1			12.07
	4			10.92

LACAILLE 8686, 20h. 58m. 35s.

September	15	−39	14	57.01
	22			57.47

B. A. C. 7327, 20h. 58m. 53s.

October	17	−23	42	28.68

A CAPRICORNI, 20h. 58m. 56s.

October	19	−25	33	43.87

LACAILLE 8691, 20h. 59m. 6s.

August	11	−27	50	56.57
	15			56.86

LACAILLE 8693, 20h. 59m. 53s.

November	6	−37	48	14.33

B. A. C. 7340, 21h. 1m. 4s.

September	23	−24	11	26.21

LACAILLE 8722, 21h. 3m. 55s.

October	9	−36	19	57.00

LACAILLE 8719, 21h. 4m. 5s.

September	16	−39	59	30.34
	21			31.96

ANONYMOUS, 21h. 4m. 20s.:

September	7	−35	42	15.85:

LACAILLE 8740, 21h. 5m. 59s.

August	18	−22	47	8.51

ζ CYGNI, 21h. 6m. 59s.

October	30	+29	39	17.61

ANONYMOUS, 21h. 7m. 26s.

		°	′	″
September	4	−15	42	11.11

ANONYMOUS, 21h. 7m. 41s.

September	15	−15	50	40.20

29 CAPRICORNI, 21h. 8m. 0s.

September	2	−15	45	1.81
	3			1.98
	4			3.16

LACAILLE 8776, 21h. 11m. 38s.

October	26	−27	47	47.31
November	6			48.04

LACAILLE 8787, 21h. 13m. 31s.

September	25	−29	45	25.93

LACAILLE 8790, 21h. 14m. 22s.

September	25	−30	1	44.94

ι CAPRICORNI, 21h. 14m. 27s.

August	27	−17	25	40.09
September	4			41.42
	21			40.60

α CEPHEI, 21h. 15m. 14s.

September	24	+61	59	37.98

1 PEGASI, 21h. 15m. 37s.

October	21	+19	12	29.09

1 PEGASI, (Ref.)

October	21	+19	12	26.87

B. A. C. 7419, 21h. 15m. 47s.

August	20	−25	47	54.09
November	6			53.52

B. A. C. 7434, 21h. 17m. 41s.

August	20	−25	50	20.48
November	6			19.22

B. A. C. 7436, 21h. 17m. 45s.

October	19	−24	25	19.29
	26			18.34

O. ARG. S. 21443, 21h. 23m. 34s.

September	2	−22	37	25.41
	4			25.05
	15			24.38
	21			24.90

O. ARG. S. 21445, 21h. 24m. 45s.

September	3	−26	1	33.71

LACAILLE 8849, 21h. 26m. 50s.

September	25	−30	18	55.38
	29			56.29

β CEPHEI, 21h. 26m. 50s.

		°	′	″
October	12	+69	56	48.15
	30			48.76
November	6			48.37

β CEPHEI, (Ref.)

October	9	+69	56	47.94
	12			48.19
	30			47.74

β CEPHEI, (Comp. *.)

November	6	+69	56	44.39

B. A. C. 7492, 21h. 27m. 15s.

August	18	−24	4	27.84
October	19			27.18

LACAILLE 8863, 21h. 30m. 6s.

September	3	−26	4	18.71
	16			19.34

LACAILLE 8862, 21h. 30m. 11s.

September	25	−30	16	5.74
	29			6.28

ξ AQUARII, 21h. 30m. 18s.

October	21	− 8	28	46.61
November	17			47.77

LACAILLE 8870, 21h. 30m. 58s.

October	26	−27	55	54.59
	28			56.14

LACAILLE 8890, 21h. 33m. 45s.

October	20	−25	44	8.55

45 CAPRICORNI, 21h. 36m. 20s.

September	29	−16	23	19.23
October	19			16.99

LACAILLE 8902, 21h. 36m. 32s.

October	20	−25	32	49.14
November	6			48.80

ε PEGASI, 21h. 37m. 19s.

August	28	+ 9	14	6.31
September	4			6.27:
October	21			7.92
November	2			5.90
	4			7.57

ε PEGASI, (Ref.)

October	21	+ 9	14	5.88
November	2			6.54
	4			7.47

LACAILLE 8907, 21h. 37m. 22s.

October	20	−28	46	4.49

LACAILLE 8918, 21h. 39m. 40s.

		°	′	″
August	18	−28	23	40.99
September	3			42.90

11 CEPHEI, 21h. 39m. 51s.

July	31	+70	40	3.03

LACAILLE 8929, 21h. 41m. 31s.

September	4	−39	15	27.43

ANONYMOUS, 21h. 42m. 5s.

October	20	−28	51	24.75

LACAILLE 8937, 21h. 42m. 41s.

August	18	−28	35	2.84
	20			2.31
September	1			(0.96)
October	20			1.60

LACAILLE 8941, 21h. 43m. 25s.

October	19	−23	55	10.42
	26			10.93

μ CAPRICORNI, 21h. 45m. 40s.

October	28	−14	12	30.11
November	11			30.84

B. A. C. 7630, 21h. 47m. 22s.

September	24	−15	54	58.68
	29			60.56

LACAILLE 8965, 21h. 47m. 47s.

November	4	−31	15	57.45
	6			57.43

LACAILLE 8968, 21h. 49m. 3s.

September	15	−27	8	24.37
October	19			22.92

79 DRACONIS, 21h. 51m. 8s.

July	31	+73	2	24.99
September	16			(23.81)
October	9			26.19
	12			27.66
November	2			25.21

79 DRACONIS, (Ref.)

October	9	+73	2	27.09
	12			25.76

11 PISCIS AUSTRALIS, 21h. 51m. 34s.

October	20	−28	17	50.56

η PISCIS AUSTRALIS, 21h. 52m. 47s.

August	20	−29	7	25.59
September	1			25.46

O. Arg. S. 21821, 21h. 54m. 28s.

September	24 . .	—18° 34′ 23″.67
	29 . .	24.24

Lacaille 9003, 21h. 54m. 39s.

November	2 . .	—28 2 19.96
	6 .	20.04

Lacaille 9005, 21h. 55m. 11s.

October	19 . .	—27 43 27.44
	26 . .	27.31

Lacaille 9012, 21h. 56m. 36s.

August	20 . .	—29 6 36.28

α Aquarii, 21h. 58m. 35s.

September	3 . .	— 0 59 54.56
	16 . .	(55.37)
October	28 . .	53.16
	30 . .	53.25
November	11 . .	53.71

α Aquarii, (Ref.)

October	30 . .	— 0 59 54.42

ι Aquarii, 21h. 58m. 52s.

July	31 . .	—14 32 47.65
August	27 . .	48.68

B. A. C. 7694, 21h. 59m. 27s.

August	18 . .	—22 55 17.36

O. Arg. S. 21904, 22h. 0m. 1s.

September	1 . .	—15 9 58.32

B. A. C. 7715, 22h. 2m. 1s.

September	29 . .	—28 58 43.57
November	13 . .	42.23

B. A. C. 7729, 22h. 3m. 30s.

November	4 . .	—27 50 18.45
	6 . .	18.30

B. A. C. 7739, 22h. 4m. 42s.

November	6 . .	—27 46 24.92

Weisse XXII, 118, 22h. 7m. 3s.

October	19 . .	—15 47 26.08
	26 . .	26.54

θ Aquarii, 22h. 9m. 27s.

September	16 . .	— 8 28 (44.88)
October	9 . .	43.17
	22 . .	42.62
November	11 . .	42.99
	17 . .	43.64

Lacaille 9093, 22h. 10m. 25s.

September	29 . .	—22° 59′ 48″.34
November	4 . .	46.51

ρ Aquarii, 22h. 12m. 50s.

November	17 . .	— 8 31 21.33

γ Aquarii, 22h. 14m. 24s.

October	22 . .	— 2 5 27.42
	30 . .	27.50

γ Aquarii, (Ref.)

October	30 . .	— 2 5 28.72

Lacaille 9113, 22h. 15m. 19s.

September	29 . .	—26 32 40.05

O. Arg. S. 22117, 22h. 16m. 6s.

October	19 . .	—21 19 16.90
	20 . .	19.85

Lacaille 9120, 22h. 16m. 16s.

September	1 . .	—27 4 41.58

π Aquarii, 22h. 18m. 8s.

September	16 . .	+ 0 40 5.33

Anonymous, 22h. 18m. 27s.

November	6 . .	—29 4 37.26

B. A. C. 7851, 22h. 18m. 35s.

November	11 . .	+85 24 6.69
	13 . .	4.35

B. A. C. 7851, (Ref.)

November	13 . .	+85 24 6.53

53 Aquarii, (1st star,) 22h. 18m. 58s.

November	17 . .	—17 27 10.32

53 Aquarii, (2d star,) 22h. 18m. 58s.

November	17 . .	—17 27 4.94

Lacaille 9135, 22h. 19m. 50s.

September	1 . .	—27 7 49.99

Lacaille 9142, 22h. 21m. 9s.

September	29 . .	—22 47 3.06

ζ Aquarii, (Ref.,) 22h. 21m. 54s.

October	13 . .	— 0 44 8.18

56 Aquarii, 22h. 22m. 46s.

October	19 . .	—15° 17′ 57″.93
	20 . .	59.86

σ Aquarii, 22h. 23m. 14s.

November	17 . .	—11 23 30.25

Lacaille 9180, 22h. 27m. 55s.

September	29 . .	—24 42 49.04

η Aquarii, 22h. 28m. 10s.

October	13 . .	— 0 50 16.99
	30 . .	16.21
November	6 . .	14.65

O. S. 22282, 22h. 30m. 5s.

October	26 . .	—22 31 15.72

κ Aquarii, 22h. 30m. 30s.

November	17 . .	— 4 56 56.75

ζ Pegasi, 22h. 34m. 29s.

October	28 . .	+10 6 7.12
	30 . .	7.29

ζ Pegasi, (Ref.)

October	9 . .	+10 6 4.76

Lacaille 9256, 22h. 40m. 9s.

October	31 . .	—26 38 40.76

τ^2 Aquarii, 22h. 42m. 10s.

November	17 . .	—14 19 48.70

21 Piscis Australis, 22h. 43m. 36s.

November	2 . .	—30 16 36.40

Lacaille 9283, 22h. 43m. 41s.

September	1 . .	—24 30 22.03

ι Cephei, 22h. 44m. 42s.

October	9 . .	+65 27 52.11
November	27 . .	53.20

ι Cephei, (Ref.)

November	27 . .	+65 27 52.41

Lacaille 9290, 22h. 44m. 58s.

October	20 . .	—29 55 25.70

λ Aquarii, 22h. 45m. 18s.

November	11 . .	— 8 19 23.59

Lacaille 9299, 22h. 47m. 19s.

October	13 . .	—23° 6′ 19″.14

B. A. C. 7990, 22h. 47m. 55s.

November	4 . .	+82 24 40.27

B. A. C. 7990, (Ref.)

November	4 . .	+82 24 38.36
	18 . .	38.88:

Lacaille 9301, 22h. 48m. 2s.

October	31 . .	—32 22 40.20

Lacaille 9307, 22h. 48m. 31s.

October	31 . .	—32 18 18.67

α Piscis Australis, 22h. 49m. 54s.

September	29 . .	—30 21 47.92
October	30 . .	48.22
November	2 . .	47.94
	6 . .	46.76
	11 . .	47.55

O. Arg. S. 22545, 22h. 52m. 51s.

October	22 . .	—23 16 35.24

Anonymous, 22h. 53m. 40s.

October	20 . .	—17 37 51.95

Lacaille 9336, 22h. 53m. 50s.

September	1 . .	—23 32 25.45

Lacaille 9338, 22h. 54m. 2s.

October	22 . .	—23 10 6.00

Lacaille 9357, 22h. 55m. 58s.

October	31 . .	—27 34 0.67

α Pegasi, 22h. 57m. 47s.

September	29 . .	+14 27 10.97
November	6 . .	11.17
	17 . .	10.78

α Pegasi, (Ref.)

October	9 . .	+14 27 9.25

c^1 Aquarii, 22h. 59m. 8s.

October	22 . .	—24 29 53.65

Anonymous, 22h. 59m. 32s.

December	7 . .	—35 37 21.13

Lacaille 9379, 23h. 1m. 16s.

October	31 . .	—26 35 11.46

O. Arg. S. 22634, 23h. 1m. 58s.

October	20	−21° 55′ 52″.71

B. A. C. 8064, 23h. 2m. 9s.

September	1	−28 50 47.97
October	13	47.61

O. Arg. S. 22688, 23h. 6m. 46s.

December	1	−17 40 12.89

ϕ Aquarii, 23h. 7m. 4s.

November	17	− 6 48 9.84

Lacaille 9411, 23h. 7m. 49s.

November	18	−25 36 50.49
	30	48.07

Anonymous 23h. 8m. 13s.

October	20	−22 5 17.01

ψ¹ Aquarii, 23h. 8m. 33s.

November	17	− 9 50 58.54

O. Arg. S. 22723, 23h. 9m. 23s.

December	7	−21 57 51.70

γ Piscium, 23h. 9m. 54.

October	22	+ 2 31 6.62
	30	6.05
November	2	5.72
	27	5.59

γ Piscium, (Ref.)

October	30	+ 2 31 5.98
November	27	3.96

γ Sculptoris, 23h. 11m. 16s.

October	13	−33 17 38.49

Lacaille 9437, 23h. 11m. 21s.

October	26	−31 18 56.93
November	13	59.06

ψ³ Aquarii, 23h. 11m. 40s.

November	17	−10 22 31.05

Anonymous, 23h. 12m. 12s.

December	1	−39 12 34.82:

o Cephei, 23h. 12m. 54s.

November	4	+67 20 46.18
December	3	46.85

o Cephei, (Ref.)

December	3	+67 20 45.68

Anonymous, 23h. 12m. 59s.

October	19	−39 15 36.94
December	1	(41.56:)

B. A. C. 8132, 23h. 13m. 48s.

October	6	−27° 45′ 7″.80

O. Arg. S. 22229, 23h. 13m. 55s.

November	30	−25 38 21.84

Lacaille 9458, 23h. 16m. 14s.

November	13	−31 52 44.16

Lacaille 9468, 23h. 17m. 56s.

October	13	−30 46 32.00

Lacaille 9479, 23h. 19m. 36s.

October	6	−23 29 33.54
November	3	34.47

κ Piscium, 23h. 19m. 45s.

October	22	+ 0 29 27.44

Lacaille 9482, 23h. 20m. 4s.

December	8	−28 2 56.98

O. Arg. S. 22851, 23h. 20m. 36s.

November	30	−16 4 7.57

θ Piscium, 23h. 20m. 52s.

November	2	+ 5 36 38.89
	27	38.85

θ Piscium, (Ref.)

October	30	+ 5 36 38.34
November	2	38.98

Lacaille 9489, 23h. 21m. 0s.

October	26	−26 11 23.48
November	13	25.06
December	1	25.77
	7	24.86

Lacaille 9508, 23h. 24m. 33s.

October	13	−26 31 1.21
December	8	2.98

Lacaille 9516, 23h. 26m. 0s.

October	6	−32 3 45.32

B. A. C. 8213, 23h. 27m. 47s.

October	19	+86 32 7.26
November	4	6.65
	27	6.91

B. A. C. 8213, (Ref.)

October	19	+86 32 6.91
November	4	6.92

Lacaille 9532, 23h. 29m. 18s.

December	8	−26 0 50.15

Lacaille 9534, 23h. 29m. 38s.

November	3	−32 38 43.49

Lacaille 9548, 23h. 32m. 22s.

October	6	−23° 18′ 26″.83
	13	26.15

ι Piscium, 23h. 32m. 45s.

October	30	+ 4 52 3.66
December	3	4.13

ι Piscium, (Ref.)

October	30	+ 4 52 2.84
December	3	1.74

Lacaille 9551, 23h. 33m. 12s.

November	3	−32 41 22.06

γ Cephei, 23h. 33m. 38s.

October	9	+76 51 4.80
November	2	3.58
	13	6.03
December	1	5.14

γ Cephei, (Ref.)

November	2	+76 51 5.14
	13	3.60
December	1	4.68

Lacaille 9568, 23h. 35m. 37s.

October	29	−29 49 11.72
	31	10.55

Lacaille 9567, 23h. 35m. 42s.

November	30	−37 33 40.81

Lacaille 9576, 23s. 36m. 29s.

December	8	−34 12 15.90

Lacaille 9579, 23h. 37m. 12s.

October	6	−27 1 20.74

τ Cassiopeæ, 23h. 40m. 13s.

November	27	+57 52 20.96

τ Cassiopeæ, (Ref.)

December	3	+57 52 (9.25)

O. Arg. S. 23052, 23h. 40m. 54s.

November	30	−17 28 29.03

δ Sculptoris, 23h. 41m. 38s.

October	6	−28 54 16.00
	13	16.63

Lacaille 9605, 23h. 42m. 2s.

December	8	−28 37 51.59

Lacaille 9610, 23h. 42m. 31s.

November	3	−26 6 31.76
	12	32.56

Lacaille 9611, 23h. 42m. 51s.

October	29	−30 10 51.21
	31	49.27

Lacaille 9636, 23h. 46m. 23s.

October	29	−30° 10′ 31″.74
	21	30.81

B. A. C. 8308, 23h. 47m. 5s.

December	8	−27 49 20.23

B. A. C. 8314, (Ref.) 23h. 48m. 4s.

October	30	+73 37 (24.70)
November	18	52.07

O. Arg. S. 23124, 23h. 48m. 11s.

November	30	−18 36 26.67

Lacaille 9652, 23h. 48m. 50s.

November	3	−22 46 17.91
	12	17.85

O. Arg. S. 23135, 23h. 49m. 12s.

October	29	−30 17 17.83
	31	16.88

Lacaille 9659, 23h. 49m. 52s.

October	13	−27 24 12.81

O. Arg. S. 23156, 23h. 50m. 52s.

November	3	−22 40 49.66

ω Piscium, 23h. 52m. 7s.

October	19	+ 6 5 19.73
November	2	18.32
	4	18.71
December	5	19.44

ω Piscium, (Ref.)

October	19	+ 6 5 17.69
November	4	18.47

Lacaille 9680, 23h. 52m. 33s.

December	8	−25 25 28.55

Anonymous, 23h. 53m. 20s.

December	3	−26 24 4.13

ζ Sculptoris, 23h. 55m. 2s.

October	29	−30 30 1.05
	31	0.70

B. A. C. 8360, 23h. 57m. 9s.

November	30	−17 18 20.65
December	3	21.83
	5	22.55

Lacaille 9706, 23h. 57m. 10s.

November	12	−30 2 56.86

O. Arg. S. 23233, 23h. 58m. 59s.

November	12	−29 55 53.80

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS,

FROM OBSERVATIONS WITH THE

TRANSIT INSTRUMENT AND MURAL CIRCLE,

IN

1863.

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS.

SUN.

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
1863.	m. s.		h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
Jan. 1	+ 3 51.2	. .	18 47 16.50	+ 0.25	1 11.04	+ 0.03					
2	4 19.2	. .	18 51 41.37	0.12	1 10.99	0.03					
3	4 47.0	. .	18 56 5.59	+ 0.27	1 10.86	0.11					
5	5 41.4	. .	19 5 53.38	0.00	1 10.77	+ 0.09					
9	7 24.3	II.	19 22 23.00	— 0.07							
12	8 36.1	. .	19 35 24.59:	— 0.03	1 10.34	— 0.01					
17	10 23.4	. .	19 56 54.73	+ 0.23	1 9.84	+ 0.06					
24	12 23.6	. .	20 26 31.38	+ 0.02	1 9.09	0.08					
26	12 50.8	. .	20 34 51.86	— 0.05	1 8.84	0.11					
31	13 44.4	. .	20 54 28.26	— 0.03	1 8.29	0.10					
Feb. 2	13 59.9	. .	21 3 36.89	+ 0.06	1 8.12	0.04					
3	14 6.4	. .	21 7 40.28	— 0.21	1 7.94	0.10					
4	14 12.2	. .	21 11 42.33	+ 0.03	1 7.84	0.08					
7	14 24.5	. .	21 23 44.26	— 0.15	1 7.52	0.05					
10	14 29.8	. .	21 35 38.96	+ 0.39	1 7.22	0.02					
14	14 26.2	. .	21 51 21.76	+ 0.20	1 6.74	0.06					
16	14 20.0	. .	21 59 8.89	— 0.01	1 6.50	0.09					
21	13 52.4	. .	22 18 23.74	+ 0.17	1 6.08	+ 0.02					
23	13 36.6	. .	22 26 1.36	— 0.12	1 5.92	0.00					
24	13 27.8	. .	22 29 49.08	— 0.13	1 5.84	— 0.01					
25	13 18.4	. .	22 33 36.00	+ 0.05	1 5.69	+ 0.05					
March 2	12 22.6	. .	22 52 22.93	— 0.03	1 5.28	0.07					
5	11 43.0	. .	23 3 32.56	+ 0.28	1 5.13	0.02					
9	10 44.3	. .	23 18 20.21	— 0.06	1 4.88	0.04					
11	10 12.8	. .	23 25 41.42	+ 0.23	1 4.76	0.06					
17	8 31.8	. .	. . . .	. .	. . .	. .	. .	— 1 20 13.5	— 1.4	16 4.42	+ 1.72
25	6 7.3	. .	0 16 47.22	0.00	1 4.21	0.25					
27	5 30.3	. .	0 24 3.39	— 0.11	1 4.39	0.07					
30	4 34.9	. .	0 34 57.30	+ 0.09	1 4.38	0.09					
April 1	3 58.2	. .	0 42 13.62	+ 0.04	1 4.48	0.02					
3	3 21.9	. .	0 49 30.49	— 0.14	1 4.46	0.08					
9	1 37.2	.	1 11 24.51	+ 0.16	1 4.64	0.08					
10	1 20.5	. .	1 15 4.54	0.02	1 4.66	0.10					
11	1 4.2	. .	1 18 44.67	0.06	1 4.76	0.04					
14	+ 0 17.1	. .	1 29 47.04	0.13	1 4.84	0.10	. .	+ 9 24 25.8	— 0.6	15 56.57	+ 1.87
25	— 2 6.3	. .	2 10 45.36	+ 0.10	1 5.52	0.09					
27	2 26.7	. .	2 18 18.28	— 0.19	1 5.63	0.12					
May 2	3 9.1	. .	2 37 18.46	— 0.03	1 6.06	0.07					
9	3 45.3	. .	3 4 17.86	+ 0.06	1 6.68	0.01	. .	17 21 16.8	+ 0.3	15 53.94	— 1.58
11	3 50.4	. .	3 12 5.96	— 0.05	1 6.78	0.09					
12	3 52.1	. .	3 16 0.74	+ 0.05	1 6.85	0.10	. .	18 7 57.9	0.3	15 51.45	+ 0.27
13	3 53.2	. .	. . . .	. .	. . .	. .	S.	18 22 55.7	0.2		
15	3 53.5	. .	3 27 48.97	0.05	1 7.08	0.11	. .	18 51 54.7	1.1	15 52.13	— 1.03
16	3 52.9	. .	3 21 46.12	+ 0.14	1 7.22	0.05	N.	19 5 55.4	+ 1.7		
18	3 49.8	. .	3 39 42.52	— 0.07	1 7.30	0.13	. .	19 33 2.4	— 1.1	15 48.94	+ 1.58
19	3 47.4	. .	3 43 41.37	+ 0.02	1 7.45	0.06	. .	19 46 4.8	— 1.0	15 49.75	0.59
20	3 44.5	. .	3 47 41.10	— 0.22	1 7.32	0.27					
22	3 37.0	II.	3 55 41.36	+ 0.09	. . .	. .	. .	20 23 8.5	+ 0.6	15 49.24	0.59
23	3 32.6	II.	3 59 42.45	+ 0.05							
28	3 2.8	. .	4 19 55.18	— 0.05	1 8.10	0.07	. .	21 27 49.7	— 1.3	15 45.27	3.63
29	2 55.4	. .	4 23 59.08	— 0.04	1 8.16	+ 0.07	. .	21 37 17.0	+ 1.3	15 47.72	+ 1.03
30	— 2 47.7	. .	. . . .	. .	. . .	. .	S.	+ 21 46 29.4	— 3.6		

SUN.

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
1863.	m. s.		h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
June 2	— 2 21.8	. .	4 40 18.96	0.00	1 8.43	+ 0.04	. .	+ 22 11 30.0	+ 1.5	15 48.04	+ 0.15
3	2 12.4	. .	4 44 25.01	— 0.06	1 8.41	0.11	. .	22 19 7.0	+ 0.3	15 45.84	2.22
4	2 2.6	. .	. . . .	. .	. . .	. .	S.	22 26 21.4	— 1.6		
6	1 42.0	. .	. . . .	.	1 8.60	0.06					
9	1 8.6	. .	5 9 8.15	+ 0.18	1 8.73	0.05	. .	22 56 28.2	1.5	15 45.70	1.64
10	0 56.9	. .	5 13 16.64	— 0.01	1 8.71	0.10					
12	— 0 32.8	. .	. . . .	. .	. . .	. .	. .	23 9 42.2	0.3	15 46.83	0.21
15	+ 0 4.9	. .	5 34 1.50	— 0.09	1 8.88	0.05	. .	23 19 17.3	0.7	15 46.36	+ 0.42
16	0 17.8	. .	5 38 10.75	+ 0.11	1 8.86	0.08	. .	23 21 39.2	0.3	15 47.87	— 1.16
17	0 30.7	. .	. . . .	. .	1 8.89	0.06	. .	23 23 37.1	0.6	15 45.72	+ 0.92
18	0 43.7	. .	. . . .	. .	. . .	. .	.	23 25 10.0	— 0.7	15 44.77	1.81
22	1 35.9	. .	6 3 8.58	— 0.04	1 8.90	0.07	. .	23 27 11.6	+ 1.2	15 46.28	0.09
23	1 48.9	. .	6 7 18.04	+ 0.04	1 8.86	0.11	. .	23 26 41.1	0.6	15 45.32	1.01
25	2 14.5	. .	. . . .	. .	. . .	. .	N.	23 24 23.1	+ 2.2		
July 2	3 38.9	. .	6 44 37.34	0.10	1 8.63	0.12	. .	23 3 34.1	— 0.7	15 43.78	2.38
3	3 50.0	. .	. . . .	. .	. . .	. .	. .	22 58 59.3	2.1	15 44.80	+ 1.36
9	4 50.4	. .	7 13 24.78	+ 0.24	1 8.34	0.08	. .	22 22 59.1	0.6	15 46.56	— 0.34
11	5 7.6	. .	. . . .	. .	. . .	. .	. .	22 7 53.1	— 1.6	15 45.29	+ 0.99
15	5 36.7	. .	. . . .	. .	1 7.94	0.09	. .	21 33 0.4:	+ 3.8	15 45.54:	0.93
20	6 1.9	. .	. . . .	. .	. . .	. .	. .	20 41 19.1	2.8	15 46.04	0.78
21	6 5.3	. .	. . . .	. .	. . .	. .	. .	20 29 54.1	+ 3.8	15 45.39	+ 1.52
22	6 8.1	. .	8 5 58.27	— 0.12	1 7.44	0.06					
24	6 11.9	. .	8 13 55.19	0.11	1 7.22	0.12					
25	6 12.9	. .	8 17 52.70	0.05	1 7.16	0.10					
28	6 12.3	. .	8 29 41.77	0.05	1 6.86	0.14					
August 1	6 3.0	. .	8 45 18.64	0.00	1 6.55	0.11					
3	5 54.8	. .	8 53 3.59	— 0.11	1 6.45	0.03					
4	5 49.8	. .	8 56 55.02	+ 0.01	1 6.28	0.12					
7	5 31.2	II.	9 8 26.10	0.05							
8	5 23.9	. .	9 12 15.36	0.02	1 5.99	0.06					
10	5 7.6	. .	9 19 52.10	+ 0.04	1 5.78	0.10					
11	4 58.6	. .	9 23 39.71	— 0.04	1 5.69	0.11					
12	4 49.1	. .	9 27 26.65	0.00	1 5.64	0.08	. .	15 0 1.9	— 0.2	15 47.75	+ 1.92
14	4 28.4	. .	9 34 58.96	0.00	1 5.49	0.07	. .	14 23 28.1	— 0.4	15 49.72	0.30
18	3 40.4	. .	9 49 57.11	+ 0.03	1 5.16	0.09	. .	13 7 36.0	+ 1.5	15 50.48	0.28
19	3 27.2	. .	9 53 40.34	0.05	1 5.13	0.05	. .	12 48 6.6	1.5	15 50.30	0.66
20	3 13.4	. .	. . . .	. .	. . .	. .	. .	12 28 24.5	2.2	15 50.35	+ 0.81
21	2 59.2	. .	10 1 5.27	0.09	1 5.01	0.03	. .	12 8 29.6	3.8	15 51.73	— 0.37
22	2 44.4	. .	10 4 47.12	0.01	1 4.89	0.08	. .	11 48 28.1	0.5	15 50.92	+ 0.65
24	2 13.5	. .	10 12 9.24	0.04	1 4.84	0.01					
26	1 40.9	. .	. . . .	. .	. . .	. .	. .	10 26 18.6	+ 2.8	15 50.90	1.53
27	1 24.0	. .	10 23 9.18	+ 0.06	1 4.60	0.07					
28	+ 1 6.6	. .	10 26 48.44	— 0.01	1 4.56	+ 0.06	. .	9 44 18.3	— 1.1	15 52.71	+ 0.16
Sept. 1	— 0 6.0	. .	. . . .	. .	1 4.46	— 0.04	. .	8 18 18.3	+ 0.6	15 54.49	— 0.72
2	0 25.0	. .	. . . .	. .	. . .	. .	. .	7 56 26.7	+ 1.6	15 55.42	— 1.42
3	0 44.2	. .	10 48 36.49	+ 0.12	1 4.30	+ 0.04	. .	7 34 31.3	— 1.4	15 53.05	+ 1.18
4	1 3.6	. .	10 52 13.82	— 0.16	1 4.26	0.04	. .	7 12 23.0	+ 1.0	15 54.46	0.00
5	1 23.3	. .	10 55 50.50	— 0.01	1 4.22	0.04	. .	6 50 9.2	1.8	15 54.98	— 0.28
8	2 23.5	. .	. . . .	. .	1 4.12	0.06	. .	5 42 52.0	0.2	15 54.99	+ 0.42
12	3 46.0	. .	. . . .	. .	. . .	. .	. .	4 11 46.2	1.5	15 55.62	+ 0.79
15	4 48.8	. .	11 31 49.87	+ 0.10	1 3.99	0.08	. .	3 2 37.8	3.8	15 57.20	— 0.01
17	5 31.0	. .	. . . .	. .	. . .	. .	. .	2 16 19.5	+ 0.7	15 56.26	+ 1.46
21	6 55.3	. .	11 53 22.40	0.06	1 4.04	0.05	. .	0 43 8.7	— 0.9	15 57.94	+ 0.87
22	7 15.2	. .	11 56 57.85	+ 0.13	1 4.03	0.07	. .	+ 0 19 43.4	+ 2.1	15 59.28	— 0.19
23	7 37.1	. .	12 0 33.61	0.00	1 4.02	0.10	. .	— 0 3 37.3	— 0.5	15 58.87	+ 0.49
24	7 57.9	. .	12 4 9.38	— 0.03	1 4.10	0.04	. .	0 27 0.0	— 1.8	15 59.40	+ 0.23
26	8 39.0	. .	12 11 21.12	+ 0.14	1 4.11	0.08	.	1 13 51.1	+ 0.8	16 0.44	— 0.25
28	9 19.3	. .	12 18 33.87	0.00	1 4.21	0.04	. .	2 0 35.1	— 2.5	16 0.35	+ 0.39
30	9 58.8	. .	12 25 47.27	0.16	1 4.25	0.08	. .	2 47 21.3	0.0	16 1.37	— 0.09
Oct. 1	10 18.1	. .	. . . .	. .	. . .	. .	. .	3 10 42.4	+ 1.5	15 58.41	+ 3.14
3	10 55.8	. .	12 36 39.88	0.03	1 4.42	0.04	. .	3 57 13.0	— 0.9	16 3.02	— 0.92
5	11 32.1	. .	12 43 56.50	0.08	1 4.52	0.04	. .	4 43 38.6	+ 2.4	16 4.31	1.67
6	11 49.7	II.	12 47 35.47	+ 0.03	. . .	. .	. .	5 6 41.2	— 1.4	16 4.07	— 1.16
9	12 39.9	. .	12 58 34.83	— 0.06	1 4.70	0.10	. .	6 15 36.5	0.9	16 2.40	+ 1.33
12	13 26.1	. .	. . . .	. .	. . .	. .	. .	7 23 47.2	0.6	16 5.75	— 1.18
13	13 40.4	. .	13 13 20.39	— 0.06	1 5.08	0.01	. .	7 46 17.9	1.7	16 4.35	+ 0.49
17	14 32.6	. .	. . . .	. .	. . .	. .	. .	9 15 17.0	— 1.1	16 4.59	1.36
19	14 55.3	. .	. . . .	. .	. . .	. .	. .	9 59 0.9	+ 0.4	16 4.61	+ 1.88
20	15 5.7	. .	13 39 30.62	+ 0.05	1 5.62	0.07	. .	10 20 35.8	— 2.8	16 6.83	— 0.06
21	15 15.5	. .	13 43 17.27	+ 0.12	1 5.68	0.10	N.	10 42 11.2:	+ 3.7		
22	15 24.7	. .	13 47 4.77	— 0.01	1 5.77	0.11	. .	11 3 27.3	+ 0.4	16 6.32	+ 1.01
23	15 33.2	. .	. . . .	. .	1 5.88	0.10	. .	— 11 24 36.1	— 0.1	16 6.54	+ 1.06
26	— 15 54.6	.	14 2 20.94	+ 0.04	1 6.22	+ 0.07					

SUN.

Date.		Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
1863.		m. s.		h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
Oct.	27	— 16 0.3	. .	14 6 11.95	— 0.12	1 6.28	+ 0.12					
	28	16 5.2	. .	14 10 3.36	+ 0.07	1 6.44	0.07	. .	— 13 7 39.2	— 0.6	16 8.96	— 0.05
	29	16 9.4	. .	14 13 55.78	0.00	1 6.58	0.04	. .	13 27 39.7	— 1.4	16 9.60	— 0.44
Nov.	2	16 18.3	. .	14 29 33.46	— 0.34	1 6.98	0.08	. .	14 45 37.0	+ 1.5	16 8.89	+ 1.26
	4	16 17.8	. .	14 37 26.62	+ 0.11	1 7.30	0.00	. .	15 23 8.3	— 0.2	16 10.42	0.21
	5	16 16.3	. .	14 41 24.76	0.04	1 7.40	0.02	. .	15 41 31.5	1.0	16 10.34	0.53
	6	16 13.9	. .	14 45 23.57	0.15	1 7.47	0.07	. .	15 59 41.4	9.5	16 9.26	1.84
	7	16 10.7	. .	14 49 23.48	+ 0.01	1 7.59	0.06	. .	16 17 33.1	0.2	16 9.52	+ 1.81
	10	15 56.0	. .	15 1 27.96	— 0.03	1 7.95	0.06	. .	17 9 30.2	— 0.5	16 12.22	— 0.20
	11	15 49.4	. .	15 5 31.27	0.14	1 8.06	0.07	. .	17 26 15.2	+ 0.2	16 10.66	+ 1.58
	12	15 41.9	. .	15 9 35.24	0.07	1 8.24	0.01	. .	17 42 41.1	— 0.2	16 13.56	— 1.10
	13	15 33.6	. .	15 13 40.08	— 0.02	1 8.32	0.05	. .	17 58 48.2	— 1.0	16 13.14	— 0.46
	14	15 24.4	.	15 17 45.76	+ 0.03	1 8.47	0.02	. .	18 14 38.4	+ 0.2	16 11.66	+ 1.24
	17	14 52.0	II.	15 30 8.03	— 0.06	. . .	. .	. .	19 0 8.1	— 0.1	16 14.00	— 0.47
	18	14 39.6	. .	. . . .	. .	. . .	. .	. .	19 14 38.5	+ 0.7	16 12.61	+ 1.13
	20	14 12.2	. .	15 42 37.35	+ 0.17	1 9.16	0.02	. .	19 42 34.6	0.3	16 13.24	0.91
	23	13 25.4	. .	15 55 13.96	0.22	1 9.50	+ 0.01	. .	20 21 48.2	+ 1.3	16 13.31:	1.42
	25	12 50.2	. .	16 3 42.29	+ 0.22	1 9.74	— 0.01	. .	20 46 2.3	— 0.5	16 13.80	1.29
	27	12 12.1	. .	16 12 13.86	— 0.03	1 9.82	+ 0.11	. .	21 8 44.8	0.9	16 13.03	2.39
	30	11 13.5	. .	16 25 6.20	+ 0.10	1 10.18	0.04	. .	21 39 50.0	0.2	16 15.76:	+ 0.13
Dec.	1	10 47.3	. .	16 29 25.35	— 0.17	1 10.31	0.00	. .	21 49 22.2	0.3	16 16.10	— 0.06
	2	10 24.3	. .	16 33 44.66	+ 0.05	1 10.27	0.12	. .	21 58 28.6	1.1	16 13.50:	+ 2.69
	3	10 0.8	. .	16 38 4.84	0.06	1 10.36	0.11	. .	22 7 11.4	0.1	16 14.88	1.45
	4	9 36.6	. .	16 42 25.53	0.18	1 10.50	0.05	. .	22 15 26.8	0.8	16 15.89	0.57
	7	8 20.6	. .	16 55 31.33	+ 0.25	1 10.76	0.00	. .	22 37 39.5	0.0	16 15.62:	1.21
	8	7 54.2	. .	16 59 54.61	— 0.01	1 10.75	0.07	. .	22 44 9.4	1.1	16 16.27	0.67
	9	7 27.4	. .	. . . .	. .	. . .	. .	. .	22 50 13.1	1.6	16 15.70	1.35
	10	7 0.1	I.	17 8 41.86:	+ 0.17	. . .	. .	. .	22 55 50.0	— 1.9	16 16.81	0.35
	14	5 7.1	. .	17 26 21.40	0.13	1 11.10	0.03					
	15	4 38.1	. .	17 30 47.08	0.10	1 11.14	0.03	. .	23 17 6.8	+ 0.8	16 17.15	0.52
	16	4 8.8	. .	17 35 13.02	+ 0.04	1 11.06	+ 0.15	. .	23 19 55.7	— 1.8	16 16.28	1.48
	19	2 40.1	. .	. . . .	. .	1 11.30	— 0.03	N.	23 25 45.8:	+ 2.1		
	24	— 0 10.6	. .	18 10 44.43	— 0.05	1 11.26	+ 0.04					
	25	+ 0 19.2	. .	. . . .	. .	. . .	. .	. .	23 24 31.3	— 2.2	16 17.16	1.16
	26	0 49.0	. .	18 19 37.32	— 0.06	1 11.16	0.11	. .	23 22 41.1	— 1.8	16 18.04	0.31
	30	+ 2 36.6	. .	18 37 21.15	+ 0.20	1 11.14	+ 0.02	. .	— 23 10 39.0	+ 0.4	16 18.10	+ 0.31

MOON.

Date.		Mean time.	Limb.	Right Ascension of Moon's Limb.	C — O		Limb.	Declination of centre.	C — O	
					Peirce.	Hansen.			Peirce.	Hansen.
1863.		h. m.		h. m. s.	s.	s.		° ′ ″	″	″
July	1	13 0.5	II.	19 40 54.51	— 0.06	+ 0.06	N.	— 17 36 29.6	+ 2.5	+ 2.5
	2	13 59.5	II.	20 43 58.08	+ 0.02	+ 0.20				
	8	19 1.0	II.	2 9 47.21	— 0.46	— 0.08				
	9	19 49.4	II.	3 2 18.54	— 0.13	+ 0.04				
	20	3 29.7	I.	11 21 11.04	+ 0.25	— 0.25				
	21	4 13.4	I.	12 8 53.10	0.05	0.29				
	22	4 59.0	I.	12 57 32.08	0.17	0.06				
	24	6 39.6	I.	14 47 16.26	0.15	— 0.03				
	25	7 35.8	I.	15 47 29.27:	0.44	+ 0.27				
	26	8 35.6	I.	16 51 20.57	0.34	+ 0.13				
	31	13 34.0	II.	22 12 43.70	+ 0.03	— 0.03	N.	— 5 46 16.6	— 0.7	— 3.3
August	1	14 26.5	II.	23 9 17.79	+ 0.11	+ 0.10				
	2	15 17.2	II.	0 4 1.25	— 0.20	— 0.04				
	3	16 6.8	II.	0 57 41.22	0.37	— 0.01				
	5	17 45.3	II.	2 44 17.05	0.37	+ 0.06				
	6	18 34.7	II.	3 37 48.47	— 0.34	— 0.03				
	7	19 24.2	II.	4 31 23.88	+ 0.02	+ 0.11				
	8	20 13.3	II.	5 24 42.56	0.03	— 0.02				
	9	21 1.9	II.	6 17 17.10	+ 0.15	+ 0.07				
	19	3 44.7	I.	13 34 23.29	— 0.01	— 0.19				
	20	4 34.6	I.	14 28 20.03	+ 0.05	0.04				
	21	5 27.8	I.	15 25 36.05	0.02	— 0.05				
	22	6 24.2	I.	16 26 7.89	0.14	+ 0.07				
	23	7 23.2	I.	17 29 12.84	0.06	— 0.02				
	24	8 23.4	I.	18 33 31.24	0.03	— 0.08				
	26	10 21.6	I.	20 39 55.71	0.35	+ 0.02				
	27	11 17.7	I.	21 40 11.54	0.62	+ 0.16				
	28	12 11.8	II.	22 40 36.91	0.55	— 0.07	N.	— 3 9 0.0	+ 5.7	+ 0.6
	29	13 4.1	II.	23 37 2.19	0.71	0.00				
	30	13 35.4	II.	0 32 23.82	0.70	0.01				
	31	14 46.1	II.	1 27 15.28	+ 0.57	— 0.07				
Septem'r	1	15 36.8	II.	2 21 59.08	+ 0.24	— 0.18				
	2	16 27.4	II.	3 16 42.13	0.33	0.01				
	4	18 8.0	II.	5 5 22.29	0.24	0.17				
	5	18 57.1	II.	5 58 34.36	0.42	0.01				
	20	6 14.6	I.	18 10 50.14	0.06	— 0.01				
	21	7 12.7	I.	19 12 59.82	0.37	+ 0.04	S.	— 18 33 38.5	— 2.6	— 3.1
	22	8 9.5	I.	20 14 0.24	0.44	— 0.05	S.	15 11 28.5	+ 1.4	0.0
	23	9 4.7	I.	21 13 19.15	0.55	0.01	S.	10 47 51.8	+ 1.7	+ 0.1
	24	9 58.3	I.	22 10 56.67	0.46	0.09	S.	5 42 46.0	— 1.0	— 2.9
	25	10 50.5	I.	23 7 15.44	0.47	— 0.05	S.	— 0 18 28.8	+ 0.4	— 2.1
	26	11 42.0	II.	0 5 3.43	0.81	+ 0.27		+ 5 2 46.6	+ 1.3	— 2.2
	27	12 33.2	II.	1 0 24.17	0.54	0.04				
	28	13 24.6	II.	1 55 53.97	0.36	0.02				
	29	14 16.3	II.	2 51 38.09	+ 0.14	+ 0.03				
	30	15 7.9	II.	3 47 24.00	— 0.42	— 0.22				
October	3	17 38.4	II.	6 30 3.12	— 0.51	— 0.10				
	4	18 25.7	II.	7 21 21.13	0.58*	0.24				
	5	19 11.3	II.	8 11 2.43	0.54	— 0.26				
	8	21 22.2	II.	10 34 10.53	0.02	+ 0.11				
	17	4 9.9	I.	17 52 17.54	0.61	— 0.25				
	18	5 7.7	I.	18 54 11.60	0.65	0.24				
	19	6 4.1	I.	19 54 37.80	0.39	0.08	S.	— 16 12 20.0	— 1.9	— 2.1
	20	6 58.5	I.	20 53 5.57	0.28	0.14	S.	12 14 0.3	0.0	0.7
	21	7 50.9	I.	21 49 38.16	— 0.03	— 0.03	S.	7 31 14.6	1.9	2.5
	22	8 41.9	I.	22 44 44.56	+ 0.04	0.00	S.	— 2 23 10.4	— 1.5	1.6
	25	11 13.1	I.	1 28 4.74	0.11	0.00				
	26	12 4.4	II.	2 25 45.05	0.22	+ 0.02		+ 16 8 22.9	+ 0.5	0.8
	27	12 56.2	II.	3 21 45.65	0.26	0.07	N.	+ 18 54 48.0	— 0.9	3.1
	28	13 48.2	II.	4 17 52.09	0.23	+ 0.03	N.	+ 20 34 55.9	— 0.9	— 3.1
	29	14 39.7	II.	5 13 22.55	0.08	— 0.09				
	31	16 18.3	II.	7 0 1.01	+ 0.13	+ 0.01				
Novem'r	1	17 4.7	II.	7 50 31.53	+ 0.32	+ 0.08				
	2	17 49.4	II.	8 39 18.02	0.40	+ 0.06				
	3	18 32.8	II.	9 26 47.99	0.37	— 0.02				
	4	19 15.6	II.	10 13 40.26	0.57	+ 0.11				
	5	19 58.6	II.	11 0 41.99	0.42	— 0.06				
	6	20 42.7	II.	11 48 43.60	+ 0.66	+ 0.18				
	15	3 59.4	I.	19 36 4.64	— 0.07	— 0.12	S.	— 17 9 17.3	— 0.2	— 1.5
	17	5 47.9	I.	21 32 47.20	— 0.45	— 0.39	S	— 8 54 59.0	+ 1.9	— 0.8

* October 4 the computed place is 1s. erroneous: made allowance for this error.

MOON.

Date.	Mean time.	Limb.	Right Ascension of Moon's Limb.	C — O		Limb.	Declination of centre.	C — O	
				Peirce.	Hansen.			Peirce.	Hansen.
1863.	h. m.		h. m. s.	s.	s.		° ′ ″	″	″
Novem'r 18	6 39.5	I.	22 27 40.82	— 0.14	— 0.10	S.	— 3 56 18.0	+ 1.5	— 1.0
19	7 28.1	. .	. . . .	. .	. .	S.	+ 1 11 39.5	— 1.2	2.9
25	12 30.2	II.	4 29 58.65	+ 0.22	— 0.01				
26	13 21.1	II.	5 44 56.25	0.34	+ 0.09	N.	20 53 5.3	— 3.5	— 4.2
30	16 27.3	II.	9 7 27.08	+ 0.32	+ 0.23				
Decem'r 1	17 10.0	II.	9 54 8.41	+ 0.20	+ 0.11				
2	17 52.2	II.	10 40 23.11	0.32	0.18				
3	18 34.8	II.	11 27 2.91	0.38	0.15				
5	20 5.0	II.	13 5 24.87	0.68	0.22				
6	20 54.5	II.	13 58 58.77	0.88	+ 0.30				
15	4 35.3	I.	22 10 21.85	0.08	— 0.06				
16	5 25.9	I.	23 5 5.66	+ 0.04	0.07	S.	— 0 25 21.8	+ 1.2	— 1.3
19	7 53.0	I.	1 44 23.74	— 0.19	0.24	S.	+ 13 33 45.5	— 2.0	— 1.9
23	11 14.7	I.	5 22 22.67	+ 0.19	0.09	S.	21 4 29.0	+ 0.2	+ 0.1
24	12 4.4	I.	6 16 14.60	0.25	0.20				
24	. . .	II.	6 18 26.35	0.32	0.17				
25	12 52.7	II.	7 10 44.31	0.32	— 0.27	S.	+ 18 32 46.9	— 1.4	— 1.1
29	15 48.7	II.	10 22 54.54	+ 0.14	+ 0.04				

MERCURY.

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
1863.	h. m.		h. m. s.	s.	s.	s.		° ′ ″	″	′ ″	″
Jan. 3	0 36.5	I.	19 27 56.79	— 0.03							
29	1 20.9	I.	21 54 58.05	0.11							
Feb. 22	22 44.4	II.	20 56 36.90	0.12							
March 1	22 29.8	II.	21 9 33.32	0.20							
May 9	1 13.8	I.	4 22 4.69	0.00							
11	1 19.1	I.	4 35 15.78	— 0.08							
12	1 21.4	I.	4 41 30.25	+ 0.12							
15	1 26.8	I.	4 58 43.99	0.08							
16	1 28.0	I.	5 3 56.64	0.16	. .	. .	. .	+ 25 12 57.1	+ 1.3		
19	1 30.2	I.	5 17 52.45	0.26							
28	1 19.6	I.	5 42 43.76	0.19							
July 22	23 16.6	II.	7 20 15.52	+ 0.04							
August 20	1 5.4	I.	10 59 45.47	— 0.03							
21	1 7.5	I.	11 5 47.52	0.11							
22	1 9.5	I.	11 11 42.95	0.15							
24	1 13.1	I.	11 23 15.00	0.05							
Sept. 2	1 24.9	I.	12 10 30.88	0.01							
4	1 26.5	I.	12 20 3.40	0.10	. .	. .	. .	— 3 21 3.4	— 1.3		
5	1 27.2	I.	12 24 41.70	— 0.03	. .	. .	N.	4 0 19.4	2.0		
15	. .	. .	. . . .	. .	. .	. .	. .	9 47 53.9	— 2.9		
21	1 22.9	I.	13 23 24.52	+ 0.03	. .	. .	. .	12 18 54.7	0.0		
22	. .	. .	. . . .	. .	. .	. .	. .	12 37 54.8	0.0		
26	. .	. .	. . . .	. .	. .	. .	. .	— 13 30 30.7	+ 0.4		
Oct. 19	22 48.1	II.	12 42 31.37	— 0.29	. .	. .	. .	— 3 19 17.1	— 0.7	4.34	— 0.07
20	22 45.0	II.	12 43 22.64	0.13	. .	. .	. .	3 10 50.9	— 0.1	4.81	0.67
25	22 37.9	II.	12 55 56.44	0.20	. .	. .	. .	3 46 58.8	+ 0.2		
27	22 38.0	II.	13 3 58.77	0.08	. .	. .	. .	— 4 30 37.6	— 0.2	4.08	— 0.73
Nov. 1	22 42.9	II.	13 28 37.91	0.43							
3	22 46.0	II.	13 39 38.77	0.08	. .	. .	. .	— 8 14 25.9	— 1.3		
4	22 47.8	II.	13 45 19.05	0.13	. .	. .	. .	8 51 7.7	— 1.4		
5	22 49.6	II.	13 51 4.37	0.03	. .	. .	. .	9 28 18.7	+ 0.2		
6	22 51.5	II.	13 56 54.38	0.16	. .	. .	. .	10 5 44.6	— 0.5	2.86	— 0.13
10	22 59.6	II.	14 20 47.97	0.16	. .	. .	. .	12 35 32.8	0.3		
11	23 1.7	II.	14 26 53.09	0.23	. .	. .	. .	13 12 26.1	— 0.3		
12	23 3.9	II.	14 33 0.18	0.11	. .	. .	. .	13 48 55.3	+ 0.1		
13	23 6.1	. .	. . . .	. .	. .	. .	. .	— 14 24 54.9	— 0.3		
16	23 12.9	II.	14 57 48.02	— 0.20							
Dec. 30	1 13.0	. .	. . . .	. .	. .	. .	. .	— 23 10 23.0	— 1.4		

VENUS.

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
Jan. 1	0 26.9	I.	19 10 22.77	+ 0.01							
3	0 29.8	I.	19 21 16.68	+ 0.05							
12	0 42.7	I.	20 9 37.95	— 0.26							
17	0 49.3	I.	20 35 52.16	+ 0.09							
29	1 2.7	I.	21 36 42.98	— 0.03							
Feb. 10	1 13.3	I.	22 34 34.56	0.00							
16	1 17.5	I.	23 2 34.81	— 0.12							
25	1 23.3	I.	23 43 45.62	+ 0.08							
March 2	1 26.1	I.	0 6 21.87	— 0.04							
11	1 31.1	I.	0 46 53.30	+ 0.11							
27	1 41.0	I.	1 59 51.02	0.05							
April 1	1 44.6.	I.	2 23 12.32	0.06	0.42	— 0.02					
10	1 52.2	I.	3 6 11.68	0.17							
22	2 4.2	I.	4 5 38.04	0.00							
25	2 7.6	I.	4 20 50.85	0.10							
27	2 10.0	I.	4 31 3.63	+ 0.00							
May 2	2 15.7	I.	4 56 47.13	— 0.13							
9	2 24.6	I.	5 33 7.06	0.01	. .	. .	. .	+ 25 3 34.1	— 1.4		
12	2 28.4	I.	5 48 44.16	— 0.02	. .	. .	. .	+ 25 16 33.2	— 1.9		

VENUS.

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
1863.	h. m.		h. m. s.	s.	s.	s.		° ′ ″	″	′ ″	″
May 15	2 32.2	I.	6 4 20.55	— 0.02							
16	2 33.4	. .	6 9 32.17	0.00	0.51	+ 0.02	.	+ 25 23 58.8	— 0.8		
18	2 35.9	. .	. . . .	. .	. .	. .	. .	25 23 28.5	0.7		
19	2 37.2	I.	6 25 4.85	0.07	. .	. .	. .	25 22 10.7	1.1		
22	2 40.8	I.	6 40 32.33	0.07	. .	. .	. .	25 14 5.2	1.6		
23	2 42.0	I.	6 45 40.14	— 0.16							
28	2 47.6	. .	7 11 4.60	+ 0.05	0.60	— 0.04	.	24 39 25.4	— 0.1		
29	2 48.6	. .	. . . .	. .	. .	. .	. .	24 31 18.2	+ 1.0		
30	2 49.7	. .	. . .	. .	. .	. .	. .	24 22 36.5	— 2.0		
June 2	2 52.8	I.	7 36 0.58	— 0.13	. .	. .	. .	23 52 29.0	+ 2.6		
3	2 53.8	I.	7 40 55.67	0.09	. .	. .	. .	23 41 15.5	+ 0.6	6.43	+ 1.57
4	2 54.7	I.	7 45 49.30	— 0.04	. .	. .	. .	23 29 24.9	— 0.7	7.49	0.57
9	2 59.1	I.	8 9 54.57	+ 0.02	. .	. .	. .	22 21 18.8	0.2	7.69	0.69
12	3 1.3	. .	. . . .	. .	. .	. .	.	21 33 48.4	— 0.4	7.33	1.22
15	3 3.4	. .	8 37 54.03	— 0.12	0.64	— 0.02	. .	20 41 38.9	+ 0.6	7.99	0.76
16	3 4.0	I.	8 42 27.63	0.08	. .	. .	. .	20 23 15.7	2.4	8.08	0.74
17	3 4.5	. .	. . . .	. .	.	. .	. .	20 4 27.8	0.9	7.56	1.34
23	3 7.4	. .	. . . .	. .	. .	. .	. .	+ 18 2 21.1	+ 2.3	9.02	+ 0.34
July 20	3 5.6	. .	10 58 0.63	0.13	0.80	+ 0.02					
22	3 4.4	. .	11 4 45.05	0.21	0.87	— 0.03					
23	3 3.8	I.	11 8 3.83	0.18							
24	3 3.2	. .	11 11 20.27	0.11	0.82	+ 0.04					
28	3 0.0	I.	11 24 2.70	0.31							
August 1	2 56.3	I.	11 36 4.71	0.16							
4	2 53.0	I.	11 44 37.83	0.07							
5	2 51.7	I.	11 47 23.31	0.22							
7	2 49.2	I:	11 52 44.87	0.12							
8	2 48.0	I.	11 55 21.07	0.17							
10	2 45.1	I.	12 0 23.47	0.17							
11	2 43.5	I.	12 2 49.54	0.21							
12	2 41.9	I.	12 5 12.02	0.20							
14	2 38.9	I.	12 9 45.71	0.11	. .	. .	. .	— 4 24 20.7	+ 6.0	16.08	+ 1.05
15	2 37.1	I.	12 11 56.73	0.16							
18	2 31.4	I.	12 18 4.27	0.12	. .	. .	. .	5 59 4.9	2.3	18.65	— 0.51
19	2 29.4	I.	12 19 57.89	0.22	. .	. .	. .	6 21 51.7	4.4	16.82	+ 1.60
20	2 27.4	I.	12 20 46.66	0.27	. .	. .	. .	6 44 9.8	3.5	17.73	0.98
21	2 25.0	I.	12 23 30.25	0.14	. .	. .	. .	7 6 1.6	3.7	17.20	1.91
22	2 22.7	I.	12 25 8.94	0.26	. .	. .	. .	7 27 23.5	2.8	18.10	1.21
24	2 17.9	I.	12 28 9.79	— 0.26							
26	2 12.5	. .	. . . .	. .	. .	. .	. .	8 47 35.7	7.0	19.47	1.12
27	2 9.6	I.	12 31 56.92	+ 0.03							
28	2 6.8	. .	. . . .	. .	. .	. .	. .	9 23 56.8	3.8	19.87	+ 1.42
29	2 4.0	I.	12 33 57.00	— 0.05							
Sept. 1	1 54.3	. .	. . . .	. .	. .	. .	. .	10 28 0.1	0.4	23.06	— 0.34
2	1 50.9	I.	12 36 33.95	0.03	. .	. .	. .	10 42 2.0	+ 2.3	21.63	+ 1.45
3	1 47.3	I.	12 36 54.79	— 0.01	. .	. .	. .	10 55 4.9	— 1.0	21.65	1.79
4	1 43.5	I.	12 37 7.87	+ 0.06							
5	1 39.5	I.	12 37 13.40	— 0.13	. .	. .	. .	11 18 28.0	+ 1.2	23.02	1.17
9	1 23.0	. .	. . . .	. .	. .	. .	N.	11 52 34.9:	6.0		
12	1 8.8	.	. . . .	. .	. .	. .	N.	12 5 31.9	1.0		
15	0 53.6	I.	12 30 41.26	0.19	. .	. .	. .	12 6 36.9	2.1	26.54	1.39
17	0 43.0	. .	. . . .	. .	. .	. .	N.	12 0 15.3	+ 1.5	25.29:	3.25
21	0 20.5	I.	12 20 47.19	0.27	. .	. .	N.	11 30 6.2	— 0.3	27.32:	2.32
22	0 14.5	I.	12 18 48.88	0.17	. .	. .	N.	11 18 59.2:	1.3		
23	0 8.5	I.	12 16 47.00	0.30	. .	. .	N.	11 6 31.0	1.0	26.36:	+ 3.68
24	0 2.5	I.	12 14 42.10	0.38	. .	. .	N.	10 52 42.8	1.4		
27	23 38.3	II.	12 6 8.62	0.20	. .	. .	N.	9 45 51.4	4.9		
Oct 8	22 35.9	II.	11 46 49.13	0.07	. .	. .	. .	5 53 58.3	5.3	29.66	— 0.53
11	22 21.7	II.	11 43 58.55	0.18	. .	. .	. .	4 53 31.6	3.8	28.83	— 0.57
16	21 59.3	II.	11 42 11.11	0.22	. .	. .	. .	3 27 17.7	5.3	26.34	+ 0.20
18	21 52.0	. .	. . . .	. .	. .	. .	S.	2 59 8.9	4.6	24.32:	1.50
19	21 48.6	II.	11 42 53.25	0.28	. .	. .	. .	2 46 30.3	7.5	25.06	0.34
20	21 45.3	II.	11 43 24.38	0.17	. .	. .	.	2 34 58.3	5.3	24.61	0.36
21	21 42.0	II.	11 44 4.03	0.23	. .	. .	. .	2 24 24.7	6.7	23.55	1.13
22	21 38.8	. .	. . . .	. .	. .	. .	S.	2 14 53.9	7.4		
25	21 30.4	II.	11 48 1.94	0.31	. .	. .	. .	1 52 38.1	5.2	23.10	+ 0.10
26	21 27.7	II.	11 49 20.25	0.36	. .	. .	. .	1 47 13.0	7.6	24.01	— 1.15
27	21 25.1	. .	. . . .	. .	. .	. .		1 42 53.0	5.7	23.23	— 0.72
28	21 22.6	II.	11 52 17.85	— 0.35	. .	. .	. .	— 1 39 31.4	— 5.3	21.94	+ 0.23

Date.	Mean time.	Limb.	Right Ascension of centre.	C — O	Sidereal time of transit of semi-diameter.	C — O	Limb.	Declination of centre.	C — O	Vertical semi-diameter.	C — O
VENUS.											
1863.	h. m.		h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Nov. 1	21 14.1	II.	11 59 31.03	— 0.66	. .	. .	. .	— 1 35 40.2	— 6.4	21.83	— 0.99
3	21 10.6	II.	12 3 42.24	0.24	. .	. .	. .	1 39 14.9	6.2	21.72	1.55
4	21 8.9	II.	12 5 56.15	0.33	. .	.	. .	1 42 19.9	6.1	20.47	0.62
5	21 7.3	II.	12 8 14.94	0.26	. .	. .	. .	1 46 14.6	6.0	20.04	0.50
6	21 5.7	II.	12 10 38.73	0.37							
10	21 0.2	. .	. . . .	. .	. .	. .	. .	2 17 23.6	5.3	19.36	1.24
11	20 59.1	II.	12 23 43.44	0.47	. .	. .	S.	2 25 47.7	4.0		
12	20 57.9	. .	. . . .	. .	. .	. .	. .	2 34 50.4	3.8	18.57	0.97
13	20 56.8	II.	11 29 24.73	0.34	. .	. .	. .	2 44 30.8	4.1	17.78	0.43
19	20 51.4	II.	12 47 49.18	0.33	. .	. .	. .	3 54 41.4	3.6	16.46	0.50
22	20 49.5	. .	. . . .	. .	. .	. .	. .	4 36 35.6	3.2	16.61	1.29
24	20 48.5	II.	13 4 28.75	0.33	. .	. .	. .	5 6 39.7	3.3	15.33	— 0.43
26	20 47.5	II.	13 11 26.04	0.10	. .	. .	. .	5 38 16.4	1.9	14.48:	+ 0.05
29	20 46.5	II.	13 23 9.94	0.40	. .	. .	. .	6 28 9.6	2.4	14.72	— 0.72
30	20 46.2	II.	13 25 48.95	0.49							
Dec. 1	20 45.9	. .	. . . .	. .	. .	. .	. .	7 2 51.4	2.4	14.49	0.82
3	20 45.6	II.	13 36 57.92	0.25	. .	. .	. .	7 38 29.1	3.5	14.75	1.41
6	20 45.2	II.	13 48 25.00	0.32	. .	. .	. .	8 33 27.0	1.8	14.60	1.71
8	20 45.0	. .	. . . .	. .	. .	. .	S.	9 10 51.5:	0.1		
9	20 45.0	. .	. . . .	. .	. .	. .	. .	9 29 40.3	2.9	12.90	0.42
14	20 45.4	II.	14 20 16.57	0.21							
15	20 45.5	II.	14 24 23.35	0.31	. .	. .	. .	11 24 9.8	1.3	12.56	0.85
20	20 46.9	II.	14 45 21.55	0.29							
22	20 47.5	. .	. . . .	. .	. .	. .	. .	13 36 52.9	— 1.9	12.11	1.13
29	20 50.8	II.	15 24 48.52	— 0.11	. .	. .	. .	— 15 43 28.8	+ 1.7	11.31	— 1.11
JUPITER.											
Jan. 11	18 12.5	. .	13 38 21.36	— 0.71	1.23	0.00					
Feb. 10	16 19.9	. .	13 43 39.49	0.79	1.35	0.00					
April 3	12 41.4	. .	13 29 37.75	0.81	1.52	— 0.02					
9	12 15.0	. .	13 26 47.72	0.76	1.48	+ 0.03					
10	12 10.6	. .	13 26 19.13	0.85	1.50	+ 0.01					
18	11 35.4	. .	13 22 29.67	0.73	1.51	— 0.01					
25	11 4.6	. .	13 19 14.89	0.82	1.49	+ 0.01					
27	10 55.8	. .	13 18 21.24	0.85	1.50	— 0.01					
May 1	10 38.4	. .	13 16 37.42	0.79	1.48	+ 0.01					
2	10 34.0	. .	13 16 12.25	0.72	1.49	0.00	. .	— 6 24 19.1	+ 0.2		
9	10 3.8	. .	13 13 27.59	0.78	1.48	— 0.01	. .	6 8 54.7	+ 0.7		
15	9 38.1	. .	13 11 24.27	0.83	1.44	+ 0.02	. .	5 57 37.6	— 0.5		
16	9 33.9	. .	13 11 5.43	0.74	1.44	+ 0.01	. .	5 55 57.1	0.0		
19	9 21.2	. .	13 10 12.39	0.64	1.46	— 0.02	. .	5 51 15.7	— 0.1		
21	9 12.8	. .	. . . .	. .	. .	. .	. .	5 48 27.0	+ 0.3		
22	9 8.6	. .	13 9 24.74	0.74	1.43	+ 0.01	. .	5 47 7.4	— 0.4	19.08	+ 1.54
23	9 4.4	. .	13 9 10.03	0.75	1.39	+ 0.04	. .	5 45 54.4	+ 1.6		
28	8 43.7	. .	13 8 5.65	— 0.73	1.41	0.00	. .	5 40 35.2	— 1.2		
29	8 39.5	. .	. . .	. .	. .	. .	. .	5 39 44.2	— 0.8	18.62	+ 1.62
June 2	8 23.2	. .	. . . . .	.	. .	. .	. .	— 5 37 0.8	+ 1.0		
SATURN.											
Jan. 11	16 58.5	. .	12 24 3.42	+ 0.67	0.58	— 0.02					
Feb. 6	15 14.7	. .	12 22 28.81	0.66	0.59	+ 0.01					
April 9	10 55.6	. .	12 7 8.71	0.67	0.62	— 0.01					
10	10 51.4	. .	12 6 53.06	0.55	0.62	— 0.01					
11	10 47.2	. .	12 6 37.42	0.58	0.56	+ 0.05					
21	10 5.4	. .	12 4 11.70	0.60	0.66	— 0.05					
25	9 48.8	. .	12 3 19.82	0.57	0.63	0.02					
30	9 28.2	. .	12 2 20.92	0.65	0.64	0.04					
May 1	9 24.1	. .	12 1 9.98	0.68	0.60	0.00					
11	8 43.2	. .	12 0 37.86	0.64	0.62	— 0.03					
15	8 27.0	. .	12 0 10.31	0.58	0.59	0.00					
16	8 23.0	. .	. . . .	. .	. .	. .	. .	+ 2 44 21.3	— 21.6		
19	8 10.9	. .	11 59 48.25	+ 0.61	0.58	0.00	. .	+ 2 45 24.4	— 20.5		

Date.	Mean time.	Limb.	Right Ascension of centre.	C—O	Sidereal time of transit of semi-diameter.	C—O	Limb.	Declination of centre.	C—O	Vertical semi-diameter.	C—O
URANUS.											
1863.	h. m.		h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Jan. 2	10 17.5	. .	5 6 33.00	— 2.68							
19	9 8.1	. .	5 4 6.44	2.23	0.14	— 0.02					
29	8 27.8	. .	5 3 2.97	2.34							
30	8 23.7	. .	5 2 57.58	2.24							
Feb. 6	7 55.6	. .	5 2 26.42	2.30							
13	7 27.8	. .	5 2 5.59	2.16	0.17	— 0.05					
Oct. 29	15 4.2	. .	5 36 56.90	— 2.74	. .	. .	. .				
Nov. 26	13 10.1	. .	5 32 57.65	— 2.74	. .	. .	. .	23 26 41.1	+ 4.1		
Dec. 23	11 19 1	.	. . . . .	. .	. .	. .	. .	+ 23 23 29.6	+ 3.9		
NEPTUNE.											
Aug. 2	15 38.5	. .	0 24 11.40	+ 2.37							
Sept. 26	11 57.8	. .	0 19 42.88	2.35	. .	. .	. .	0 30 6.3	+ 12.6		
Oct. 9	11 5.3	. .	. . . . .	. .	. .	. .	. .	0 21 31.9	+ 15.1		
13	10 49.2	. .	. . . . .	. .	. .	. .	. .	0 19 0.3	15.5		
19	10 25.0	. .	0 17 26.45	2.14	. .	. .	. .	0 15 25.4	12.7		
26	9 56.9	. .	0 16 0.78	(2.18)	. .	. .	. .	0 11 28.3	13.2		
Nov. 2	9 28.8	. .	. . .	. .	. .	. .	. .	0 7 54.8	13.4		
4	9 20.7	. .	0 16 5.12	2.23	. .	. .	. .	0 6 58.5	13.5		
12	8 48.7	. .	. . . . .	. .	. .	. .	. .	0 3 37.9	14.0		
13	8 44.7	. .	0 15 28.21	2.18	. .	. .	. .	+ 0 3 16.3	13.5		
18	8 24.8	. .	0 15 11.08	2.16	. .	. .	. .	+ 0 1 36.5	13.2		
Dec. 1	7 33.2	. .	. . . . .	. .	. .	. .	. .	— 0 1 16.6	11.8		
3	7 25.3	. .	. . . . .	. .	. .	. .	. .	0 1 32.0	12.0		
4	7 21.3	. .	0 14 34.63	2.18	. .	. .	. .	0 1 39.3	13.0		
5	7 17.4	. .	. . . . .	. .	. .	. .	. .	0 1 44.3	12.4		
7	7 9.5	. .	0 14 31.21	2.12	. .	. .	. .	0 2 0.9	(20.4)		
8	7 5.5	. .	0 14 30.48	1.93	. .	. .	. .	0 1 57.9	14.3		
9	7 1.6	. .	0 14 29.49	2.13	. .	. .	. .	0 1 58.5	12.6		
10	6 57.7	. .	0 14 29.05	1.91	. .	. .	. .	0 2 0.2	12.9		
15	6 38.0	. .	. . . . .	. .	. .	. .	. .	— 0 1 55.1	+ 13.1		
VESTA.*											
Dec. 29	8 31.8	. .	3 3 49.80	+ 0.24	. .	. .	. .	+ 10 43 22.4	— 0.6		
FLORA.*											
Sept. 26	10 42.9	. .	23 4 40.14	. .	. .	. .	. .	— 17 11 25.6			
Oct. 19	9 3.6	. .	22 56 2.68	. .	. .	. .	.	— 17 25 43.1			
COMET 1863, II.											
May 14	. . . .	. .	. . . . .	. .	. .	. .	. .	+ 76 37 14.9			
15	13 49.7	. .	17 23 41.79	. .	.	. .	. .	+ 77 47 51.8			

* These Declinations are not corrected for parallax.

RIGHT ASCENSIONS AND DECLINATIONS

OF

STARS, ASTEROIDS, AND COMETS,

OBSERVED WITH THE EQUATORIAL,

1863.

RIGHT ASCENSIONS AND DECLINATIONS OF STARS, ASTEROIDS, AND COMETS,

OBSERVED WITH THE EQUATORIAL IN 1863.

E.	STAR COMPARED.	COMPARISON STARS.	*a*	*δ*	No. of comp.
3.		PLEIADES.	h. m. s.	° ″ ′	
y 19	Electra, 17 *b*	*η* Tauri	3 36 33.92	+ 23 40 12.79	5
ry 2	Electra, 17 *b*	*η* Tauri	33.94	12.66	5
5	Electra, 17 *b*	*η* Tauri	34.03	12.33	2
9	Electra, 17 *b*	*η* Tauri	34.04	14.01	5
27	Electra, 17 *b*	*η* Tauri	34.04	13.52	5
29	Electra, 17 *b*	*η* Tauri	34.01	13.75	6
er 3	Electra, 17 *b*	*η* Tauri	34.03	13.42	5
y 19	Merope, 23 *d*	*η* Tauri	3 38 1.49	23 30 32.24	5
ry 2	Merope, 23 *d*	*η* Tauri	1.63	32.29	5
9	Merope, 23 *d*	*η* Tauri	1.51	33.70	5
ber 6	Merope, 23 *d*	*η* Tauri	1.50	33.19	10
y 19	Atlas, 27 *f*	*η* Tauri	3 40 50.47	23 37 21.88	5
ry 2	Atlas, 27 *f*	*η* Tauri	50.65	20.56	5
er 4	Atlas, 27 *f*	*η* Tauri	50.71	19.37	10
r 29	Atlas, 27 *f*	*η* Tauri	50.54	19.75	5
ber 3	Atlas, 27 *f*	*η* Tauri	50.55	20.31	5
2	Cælano, 16 *g*	*η* Tauri	3 36 28.58	23 50 46.86	3
4	Cælano, 16 *g*	*η* Tauri	28.81	47.63	10
5	Cælano, 16 *g*	*η* Tauri	29.43	45.40	6
13	Cælano, 16 *g*	*η* Tauri	29.22	47.89	10
r 29	Cælano, 16 *g*	*η* Tauri	29.12	47.88	5
31	Cælano, 16 *g*	*η* Tauri	29.21	47.42	5
ber 3	Cælano, 16 *g*	*η* Tauri	29.38	47.52	5
2	A. 7	*η* Tauri	3 37 33.33	23 35 55.44	3
4	A. 7	*η* Tauri	33.50	54.64	9
ber 6	A. 7	*η* Tauri	33.50	55.60	10
2	Pleione, 28 *h*	*η* Tauri	3 40 51.57	23 42 21.47	3
4	Pleione, 28 *h*	*η* Tauri	51.64	21.43	10
5	Pleione, 28 *h*	*η* Tauri	51.79	19.24	6
r 26	Pleione, 28 *h*	*η* Tauri	51.81	20.97	3
27	Pleione, 28 *h*	*η* Tauri	51.80	20.74	4
29	Pleione, 28 *h*	*η* Tauri	51.73	21.40	5
31	Pleione, 28 *h*	*η* Tauri	51.71	21.77	5
5	A. 11	*η* Tauri	3 38 20.61	23 39 53.91	2
ber 6	A. 11	*η* Tauri	20.76	58.42	5
r 29	A. 11	*η* Tauri	20.54	54.99	6
ber 3	A. 11	*η* Tauri	20.54	55.26	5
r 27	A. 11	*η* Tauri	20.48	54.49	4
9	A. 1	*η* Tauri	3 37 7.85	23 35 36.95	2
ber 6	A. 1	*η* Tauri	8.15	38.43	6
13	A. 8	*η* Tauri	3 37 54.83	23 45 21.89	8
r 26	A. 8	*η* Tauri	54.80	23.70	11
13	A. 9	*η* Tauri	3 37 57.08	23 45 3.63	3
r 26	A. 9	*η* Tauri	3 37 57.21	23 45 2.10	3
ber 2	A. 42	*η* Tauri	3 39 40.51	23 39 49.21	3
4	A. 42	*η* Tauri	40.77	50.76	11
2	A. 43	*η* Tauri	3 40 48.00	23 42 29.17	8
4	A. 43	*η* Tauri	48.27	28.64	11
4	A. 24	*η* Tauri	3 39 2.30	23 40 49.65	11
r 26	A. 41	*η* Tauri	3 40 15.48	23 44 56.29	10
ber 4	A. 13	*η* Tauri	3 38 57.39	23 41 31.82	10
4	A. 18	*η* Tauri	3 39 0.59	23 42 10.67	10
4	A. 44	*η* Tauri	3 40 7.36	23 36 53.64	10
4	A. 45	Atlas, 27 *f*	3 40 21.25	23 34 35.05	3
6	A. 22	*η* Tauri	3 39 6.21	23 28 42.47	10
6	A. 13	*η* Tauri	3 38 45.98	23 33 29.66	10
r 29	A. 24	Cælano, 16 *g*	3 39 9.80	23 51 10.50	3
29	A. 33	Cælano, 16 *g*	3 41 6.12	23 49 3.66	3
ber 3	A. 10	Cælano, 16 *g*	3 38 8.20	23 48 59.44	10
17	A. 10	Cælano, 16 *g*	8.11	59.37	10
3	A. 24	Cælano, 16 *g*	3 39 10.08	23 51 10.42	10
17	A. 24	Cælano, 16 *g*	10.00	10.26	10
3	A. 33	Cælano, 16 *g*	3 41 6.32	23 49 3.53	10
17	A. 33	Cælano, 16 *g*	6.19	2.92	10
ber 2	A. 46	*η* Tauri	3 38 58.71	23 28 31.20	3
2	A. 47	*η* Tauri	3 39 21.15	23 33 57.96	2
2	A. 48	*η* Tauri	3 39 33.81	+ 23 30 21.97	3

DATE.	MEAN TIME—WASH.	COMPARISON STARS.	α	δ	No. of comp.
		IRENE.			
1863.	h. m. s.		h. m. s.	° ′ ″	
February 24	9 57 37.8	Lalande 21014	10 50 17.19	+ 24 6 31.41	8
March 3	10 3 50.6	B. Z. 353, 21	10 44 7.65	24 53 27.96	5
5	8 47 20.4	Struve, C. Gen. 1248	10 42 24.83	+ 25 4 23.47	8
		COMET 1863, II.			
May 4	11 32 23.9	(* 119) W.	19 42 13.40	+ 58 21 26.11	6
4	12 19 8.3	(* 119) W.	19 42 2.02	58 26 15.65	5
9	11 5 35.6	Oeltzen N. 18980	19 3 6.62	69 7 43.46	4
9	11 35 30.3	Oeltzen N. 18967	19 2 51.81	69 10 23.66	6
10	9 54 2.3	Radcliffe 4164	18 52 22.61	70 49 58.34	7
11	8 31 20.1	Oeltzen N. 18534	18 40 19.57	72 23 58.14	2
11	8 31 20.1	Oeltzen N. 18551	18 40 19.66	72 23 58.58	2
11	8 49 58.8	Lalande 35006	18 40 13.18	77 25 11.94	10
14	10 49 40.9	Oeltzen N. 17680	17 48 12.87	78 34 57.01	9
15	9 21 45.5	Oeltzen N. 17136	17 27 58.60	77 37 23.81	4
15	9 21 45.5	Oeltzen N. 17168	17 27 58.57	77 37 22.94	4
16	8 52 49.5	Schwerdt 1014	17 4 34.96	78 29 19.72	8
18	9 20 37.1	(* 120) W.	16 10 2.16	79 43 1.06	6
19	10 6 31.9	Schwerd 919	15 40 18.30	80 3 30.12	6
21	10 31 7.0	Fedoenko 2537	14 43 13.78	80 11 47.92	9
21	11 46 23.9	Schwerd 853	14 41 48.63	80 11 37.09	2
22	9 52 8.8	Schwerd 835	14 17 49.57	80 3 28.14	5
23	11 11 1.8	Radcliffe 317	13 52 44.50	79 46 43.47	7
27	10 42 56.6	Oeltzen N. 12996	12 42 0.86	78 1 42.96	7
28	9 59 6.2	Oeltzen N. 12827	12 29 46.50	77 30 57.05	5
30	11 15 18.4	Oeltzen N. 12407	12 8 39.96	76 23 28.00	3
ne 1	9 22 58.6	Oeltzen N. 12337	11 53 27.89	75 19 51.64	4
1	. . . . .	Oeltzen N. 12397	11 53 26.23	75 19 53.08	4
4	9 35 45.7	Oeltzen N. 12020	11 35 57.71	73 42 51.00	5
7	9 14 4.3	(* 123) W.	11 23 51.93	72 11 56.55	8
8	9 33 25.1	Struve, C. Gen. 1326	11 20 40.04	71 42 37.18	7
9	10 7 43.0	Oeltzen N. 11901	11 17 44.42	71 13 30.38	4
12	9 56 34.9	Oeltzen N. 11590	11 10 54.94	69 52 58.00	6
12	. . . . .	Oeltzen N. 11619	11 10 53.50	69 52 58.34	6
16	10 14 14.2	(* 125) W.	11 4 28.84	68 16 26.02	8
21	10 58 44.9	(* 124) W.	11 4 54.91	59 26 30.84	6
22	9 59 46.4	Oeltzen N. 11584	11 5 28.62	59 17 50.71	3
22	10 26 59.4	Oeltzen N. 11518	11 5 31.69	+ 59 17 36.40	4
		METIS.			
June 15	9 45 10.5	Oeltzen S. 15541	16 11 57.88	− 21 43 15.36	14
July 1	10 19 27.3	Oeltzen S. 15227	15 59 59.00	21 38 45.67	20
		ECHO.			
July 22	11 47 37.3	Oeltzen S. 18395	18 24 25.86	− 17 56 17.60	6
24	10 59 46.7	Oeltzen S. 18248	18 22 52.22	17 59 14.33	10
		FIDES.			
August 10	10 14 11.4	Oeltzen S. 20086	19 47 12.96	− 25 31 52.22	11
19	10 1 32.3	Oeltzen S. 19999	19 40 37.28	25 36 35.73	12
		NEMAUSA.			
September 15	10 26 50.9	Bond's Zones 22, 23	0 9 15.90	+ 0 8 30.57	10
16	9 40 12.6	Bond's Zones 22, 23	0 8 28.66	− 0 1 2.02	4
22	9 28 29.3	Weisse O, 71	0 3 30.66	1 0 5.69	10
24	9 43 5.5	B. A. C. 8365	0 1 49.58	1 19 58.08	10
28	10 10 47.4	Weisse XXIII, 1209	23 58 29.15	1 59 15.39	8
29	9 6 56.4	Weisse XXIII, 1209	23 57 41.94	− 2 8 25.95	10
		ANGELINA.			
September 15	11 40 24.5	Weisse O, 88	0 6 23.79	+ 2 21 1.41	8
22	13 51 2.9	Weisse O, 10	0 0 29.11	1 45 16.82	10
24	10 36 2.2	Weisse XXIII, 1186	23 58 54.58	1 35 34.72	10
29	10 11 21.8	(* 126) W.	23 54 43.95	1 9 38.86	7
October 5	10 44 16.3	Weisse XXIII, 1002	23 49 51.41	0 38 48.52	10
8	9 7 50.6	Weisse XXIII, 1002	23 47 36.63	+ 0 24 21.74	10
		DORIS.			
October 8	10 26 34.6	Weisse I, 612	1 38 1.13	+ 7 9 22.65	10
9	9 51 28.6	Santini, 102	1 27 19.69	7 3 9.02	4
12	9 13 35.7	Weisse I, 576	1 35 13.07	6 44 18.91	7
13	10 7 38.6	Weisse I, 576	1 34 28.19	6 37 41.97	10

DATE.	MEAN TIME—WASH.	COMPARISON STARS.	a	δ	No. of comp.
		EURYNOME.			
1863.	h. m. s.		h. m. s.	° ′ ″	
September 23	9 2 50.1	Weisse O, 944	0 55 48.22	+ 8 59 39.35	13
24	11 27 15.6	Weisse O, 944	0 55 4.14	8 51 46.38	8
24	11 49 7.9	Weisse O, 946	0 55 3.77	8 51 43.94	8
25	8 33 27.3	Weisse O, 944	0 54 27.89	8 45 20.13	12
25	8 45 27.7	Lalande 1737	0 54 27.68	8 45 26.64	5
26	10 5 24.6	Lalande 1737	0 53 43.51	8 37 29.59	8
28	8 45 56.0	Santini 58	0 52 19.51	8 22 18.84	12
30	9 1 2.8	B. A. C. 286	0 50 49.73	8 6 15.65	8
October 5	9 18 1.7	Weisse O, 749	0 46 58.01	7 24 11.89	10
6	8 28 49.2	Weisse O, 749	0 46 12.66	7 15 49.44	11
8	8 6 6.6	Weisse O, 788	0 44 40.10	6 58 35.06	10
9	8 37 12.3	Weisse O, 733	0 43 52.38	6 49 37.22	20
12	8 0 55.5	Weisse O, 742	0 41 35.00	6 23 35.93	20
13	8 52 21.5	Weisse O, 742	0 40 48.13	6 14 31.74	10
17	13 6 48.9	Weisse O, 616	0 37 47.90	5 38 32.84	10
18	8 32 7.2	Santini 39	0 37 14.30	5 31 49.54	6
19	8 2 54.3	Santini 39	0 36 34.91	5 23 38.58	20
19	9 5 37.7	Santini 39	0 36 33.21	5 23 15.54	10
20	9 39 5.4	Santini 39	0 35 53.42	5 14 51.07	12
26	7 39 38.8	Weisse O, 556	0 32 29.80	4 29 4.65	20
27	8 48 44.2	Weisse O, 506	0 31 58.93	4 21 35.96	10
27	8 48 44.2	Weisse O, 511	0 31 58.98	4 21 39.04	10
28	11 4 56.5	Weisse O, 506	0 30 27.98	4 13 54.72	7
31	8 20 9.2	Weisse O, 571	0 30 17.72	3 55 0.17	7
November 2	8 24 7.1	Weisse O, 477	0 29 37.73	3 42 52.64	14
13	8 37 18.2	Santini 30	0 28 9.98	2 53 8.43	8
18	9 37 23.7	Santini 30	0 28 49.33	2 40 39.29	11
18	9 47 54.1	(* 127) W.	. . . .	. . . .	15
30	7 51 1.4	B. A. C. 161	0 33 39.45	2 36 30.22	10
30	. . . .	B. A. C. 167	0 33 39.50	2 36 27.90	10
December 1	7 32 42.1	B. A. C. 167	0 34 14.91	2 37 41.37	11
3	7 11 11.5	Weisse O, 583	0 35 30.75	2 40 44.51	12
5	7 35 29.4	Weisse O, 583	0 36 55.60	2 44 44.46	8
14	8 7 56.8	Weisse O, 770	0 44 34.48	3 13 2.54	5
14	8 13 44.7	Weisse O, 775	0 44 34.22	3 12 59.08	8
23	8 54 49.2	Weisse O, 928	0 54 13.25	3 56 29.78	14
24	8 6 31.1	Weisse O, 928	0 55 21.19	+ 4 1 57.18	8
		COMET 1863, IV.			
November 7	14 38 56.0	Radcliffe 2771	11 42 29,33	+ 41 13 38.61	6
		MELPOMENE.			
November 10	9 1 12.6	Weisse III, 228	3 16 34.64	— 3 34 21.13	12
10	. . . .	Weisse III, 240	3 16 34.53	3 34 20.95	12
12	9 17 22.7	Weisse III, 240	3 14 48.63	— 3 41 38.99	12
		LÆTITIA.			
November 10	10 18 14.2	Santini 222	3 28 25.35	+ 2 17 52.03	12
12	10 31 14.8	Weisse III, 422	3 26 42.94	2 8 47.50	12
12	. . . .	Weisse III, 454	3 26 42.72	+ 2 8 48.69	12
		PALES.			
December 3	9 35 1.9	Weisse IV, 620	4 30 57.73	+ 25 17 45.06	8
10	9 10 55.5	Weisse IV, 512	4 24 44.34	24 54 8.73	15
		PANDORA.			
December 4	8 28 27.4	B. Z. 400, 45	4 8 40.71	+ 31 12 13.75	12
7	9 17 20.3	B. Z. 400, 45	4 5 33.73	31 6 33.14	4
9	8 30 32.8	B. Z. 400, 37	4 2 36.52	31 2 16.55	12

MEAN PLACES FOR 1860.0

OF

COMPARISON STARS,

USED IN

OBSERVATIONS WITH THE EQUATORIAL,

1863.

MEAN PLACES FOR 1860.0

OF COMPARISON STARS, USED IN OBSERVATIONS WITH THE EQUATORIAL, 1863.

MEAN PLACES FOR 1860.0 OF COMPARISON STARS.

STAR.	MAG.	α	AUTHORITY.	δ	AUTHORITY.
			PLEIADES.		
		h. m. s.		° ′ ″	
η Tauri	3	3 39 10.03	Washington Observations	+ 23 40 10.11	Washington Observations.
			IRENE.		
Lalande 21014, 6	7.5	10 48 46.74	Lalande Catalogue	+ 23 59 58.77	Lalande Catalogue.
B. Z. 353, 21	8	10 49 41.50	Bessel's Zones	24 53 14.96	Bessel's Zones.
Σ Cat. G. 1248	8	10 43 27.35	Struve Cat. Gen.	+ 25 11 32.72	Struve Cat. Gen.
			COMET 1863, II.		
Oeltzen N. 19614	9	19 41 45.61	Oeltzen N.	+ 58 10 20.58	Oeltzen N.
(* 119) W.	9.5	19 41 52.14	Washington Equatorial	58 25 5.73	Washington Equatorial.
Oeltzen N. 18980	8	19 3 47.13	Oeltzen N.	69 5 28.38	Oeltzen N.
Oeltzen N. 18967	8	19 3 9.93	Oeltzen N.	69 13 52.28	Oeltzen N.
Radcliffe 4164	6	18 56 5.01	Radcliffe Catalogue	71 6 30.57	Radcliffe Catalogue.
Oeltzen N. 18534	8.5	18 36 47.23	Oeltzen N.	72 17 26.34	Oeltzen N.
Oeltzen N. 18552	8	18 37 23.08	Oeltzen N.	72 24 49.58	Oeltzen N.
Lalande 35006	8	18 38 23.71	Lalande Catalogue	72 15 10.25	Lalande Catalogue.
Oeltzen N. 17680	9	17 51 58.81	Oeltzen N.	76 31 6.66	Oeltzen N.
Oeltzen N. 17136	8	17 20 59.32	Oeltzen N.	77 29 39.62	Oeltzen N.
Oeltzen N. 17168	9	17 23 28.29	Oeltzen N.	77 37 13.49	Oeltzen N.
Schwerd. 1014	7	17 7 23.25	Schwerd.'s Catalogue	78 17 15.88	Schwerd. Catalogue.
Radcliffe 3593	5.9	16 33 36.96	Radcliffe Catalogue	79 15 30.60	Radcliffe Catalogue.
(* 120) W.	9.5	16 13 2.75	Washington Equatorial	79 36 00.12	Washington Equatorial.
Schwerd. 919	9	15 34 20.78	Schwerd. Catalogue	80 14 17.16	Schwerd. Catalogue.
Schwerd. 853	7	14 37 38.13	Schwerd. Catalogue	80 15 47.76	Schwerd. Catalogue.
Federenko 2537	8	14 43 19.20	Washington Equatorial	80 22 53.12	Washington Equatorial.
Schwerd. 835	8	14 18 56.24	Schwerd. Catalogue	79 58 47.01	Schwerd. Catalogue.
Radcliffe 3117	7	13 50 34.55	Radcliffe Catalogue	79 41 10.72	Radcliffe Catalogue.
Oeltzen N. 12996	9	12 40 53.15	Oeltzen N.	78 4 17.09	Oeltzen N.
Oeltzen N. 12827	8	12 31 23.94	Oeltzen N.	77 24 30.09	Oeltzen N.
Oeltzen N. 12407	8.5	12 3 10.55	Oeltzen N.	76 13 38.31	Oeltzen N.
Oeltzen N. 12337	9	11 59 31.45	Oeltzen N.	75 27 0.14	Oeltzen N.
Oeltzen N. 12397	6.5	12 2 56.43	Oeltzen N.	75 26 24.20	Oeltzen N.
Oeltzen N. 12020	7.5	11 36 39.21	Oeltzen N.	73 55 22.34	Oeltzen N.
Oeltzen N. 11674	8	11 12 35.49	Oeltzen N.	72 29 27.47	Oeltzen N.
(* 123) W.	9	11 22 38.03	Washington Equatorial	72 13 25.27	Washington Equatorial.
Struve, C. G., 1326	8.2	11 26 59.27	Struve Cat. Gen.	71 34 35.75	Struve Cat. Gen.
Oeltzen N. 11901	9	11 29 11.19	Oeltzen N.	71 19 47.54	Oeltzen N.
Oeltzen N. 11590	7	11 7 40.23	Oeltzen N.	69 58 53.76	Oeltzen N.
Oeltzen N. 11619	9	11 8 48.76	Oeltzen N.	69 57 7.76	Oeltzen N.
Oeltzen N. 11571	9	11 6 6.72	Oeltzen N.	68 18 3.23	Oeltzen N.
(* 125)	9	11 7 8.18	Washington Equatorial	68 19 55.32	Washington Equatorial.
(* 124)	9	11 5 7.38	Washington Equatorial	59 24 27.07	Washington Equatorial.
Oeltzen N. 11584	8	11 7 20.79	Oeltzen N.	58 58 41.34	Oeltzen N.
Oeltzen N. 11518	7.5	11 3 23.04	Oeltzen N.	+ 59 39 29.46	Oeltzen N.
			METIS.		
Oeltzen S. 15541	6.5	16 12 26.27	Oeltzen S.	— 21 30 0.51	Oeltzen S.
Oeltzen S. 15227	8	15 58 36.16	Oeltzen S.	— 21 28 53.42	Oeltzen S.
			ECHO.		
Oeltzen S. 18395	8	18 25 53.07	Oeltzen S.	— 17 38 16.15	Oeltzen S.
Oeltzen S. 18248	6.5	18 19 46.28	Oeltzen S.	— 17 52 51.57	Oeltzen S.
			FIDES.		
Oeltzen S. 20086	9	19 48 37.57	Oeltzen S.	— 25 27 21.29	Oeltzen S.
Oeltzen S. 19999	8	19 42 9.62	Oeltzen S.	— 25 39 12.87	Oeltzen S.

MEAN PLACES FOR 1860.0 OF COMPARISON STARS.

STAR.	MAG.	*a*	AUTHORITY.	δ	AUTHORITY.
			NEMAUSA.		
		h. m. s.		° ′ ″	
Bond's Zones (22–23)	9	0 6 51.13	Bond's Zones	+ 0 5 26.93	Bond's Zones.
Weisse O, 71	9	0 4 49.03	Weisse Catalogue	− 1 0 30.61	Weisse Catalogue.
B. A. C. 8365	7	23 57 53.19	Weisse Catalogue	1 16 49.15	Weisse Catalogue.
Weisse XXIII, 1209	8	23 59 8.67	Weisse Catalogue	− 2 0 59.55	Weisse Catalogue.
			ANGELINA.		
Weisse O, 88	9	0 5 49.64	Weisse Catalogue	+ 2 10 17.63	Weisse Catalogue.
Weisse O, 10	9	0 2 18.81	Weisse Catalogue	1 31 32.47	Weisse Catalogue.
Weisse XXIII, 1186	9	23 57 59.57	Weisse Catalogue	1 37 11.51	Weisse Catalogue.
(* 126) W.	9.5	23 53 36.02	Washington Equatorial	1 6 25.	Washington Equatorial.
Weisse XXIII, 1002	9	23 49 22.36	Weisse Catalogue	+ 0 28 13.50	Weisse Catalogue.
			DORIS.		
Weisse I, 612	9	1 34 16.28	Weisse Catalogue	+ 7 11 52.54	Weisse Catalogue.
Santini 102	8	1 41 19.45	Santini Catalogue	6 59 7.65	Santini Catalogue.
Weisse I, 576	9	1 33 4.38	Weisse Catalogue	+ 6 22 38.18	Weisse Catalogue.
			EURYNOME.		
Weisse O, 944	8	0 54 24.75	Weisse Catalogue	+ 8 59 21.27	Weisse Catalogue.
Weisse O, 946	9	0 54 30.13	Weisse Catalogue	8 51 2.37	Weisse Catalogue.
Lalande 1737	8	0 53 23.96	Lalande Catalogue	8 44 0.13	Lalande Catalogue.
Santini 58	7	0 55 24.37	Santini Catalogue	8 22 44.68	Santini Catalogue.
B. A. C. 286	6	0 55 12.40	B. A. Catalogue	8 4 1.83	Washington Observations.
Weisse O, 749	8	0 43 39.36	Weisse Catalogue	7 17 1.20	Weisse Catalogue.
Weisse O, 768	9	0 45 28.04	Weisse Catalogue	6 56 25.15	Weisse Catalogue.
Weisse O, 733	9	0 42 49.16	Weisse Catalogue	6 54 11.96	Weisse Catalogue.
Weisse O, 742	9	0 43 14.15	Washington Observations	6 20 43.38	Washington Observations.
Weisse O, 616	9	0 36 2.87	Weisse Catalogue	5 48 6.53	Weisse Catalogue.
Santini 39	8	0 36 17.49	Santini Catalogue	5 23 14.15	Santini Catalogue.
Weisse O, 556	9	0 33 06.04	Weisse Catalogue	4 30 38.86	Weisse Catalogue.
Weisse O, 506	9	0 30 8.38	Weisse Catalogue	4 15 36.77	Weisse Catalogue.
Weisse O, 511	9	0 30 50.30	Weisse Catalogue	4 21 30.59	Weisse Catalogue.
Weisse O, 571	9	0 33 45.50	Weisse Catalogue	3 59 55.97	Weisse Catalogue.
Weisse O, 477	8	0 28 17.09	Weisse Catalogue	3 31 21.17	Weisse Catalogue.
Santini 30	8	0 26 42.81	Washington Observations	2 32 52.24	Washington Observations.
(Double * 127) W.	8	0 28 25.	Washington Observations	2 32 39.	Washington Observations.
B. A. C. 161	7	0 30 18.27	B. A. Catalogue	2 21 59.07	B. A. Catalogue.
B. A. C. 167	7	0 31 54.77	B. A. Catalogue	2 21 6.37	B. A. Catalogue.
Weisse O, 583	8	0 34 9.20	Weisse Catalogue	2 49 48.70	Weisse Catalogue.
Weisse O, 770	9	0 44 25.00	Weisse Catalogue	3 15 36.36	Weisse Catalogue.
Weisse O, 775	8	0 44 43.19	Weisse Catalogue	3 17 51.98	Weisse Catalogue.
Weisse O, 928	7	0 53 36.75	Weisse Catalogue	+ 4 4 42.99	Weisse Catalogue.
			COMET 1863, IV.		
Radcliffe 2771	7	11 50 2.14	Radcliffe Catalogue	+ 41 7 33.36	Radcliffe Catalogue.
			MELPOMENE.		
Weisse III, 228	9	3 13 4.33	Weisse Catalogue	− 3 31 39.97	Weisse Catalogue.
Weisse III, 240	8	3 13 47.35	Weisse Catalogue	− 3 37 2.78	Weisse Catalogue.
			LÆTITIA.		
Santini 222	8	3 31 38.17	Santini Catalogue	+ 2 18 15.13	Santini Catalogue.
Weisse III, 422	9	3 24 9.43	Weisse Catalogue	2 10 51.96	Weisse Catalogue.
Weisse III, 454	9	3 25 42.62	Weisse Catalogue	+ 2 5 51.16	Weisse Catalogue.
			PALES.		
Weisse IV, 620	8	4 28 50.86	Weisse Catalogue	+ 25 26 20.19	Weisse Catalogue.
Weisse IV, 512	8	4 23 51.24	Weisse Catalogue	+ 24 52 55.00	Weisse Catalogue.
			PANDORA.		
B. Z. 400, 45	8	4 7 3.33	Bessel's Zones	+ 31 20 20.06	Bessel's Zones.
B. Z. 400, 37	8	4 0 47.43	Bessel's Zones	+ 31 16 25.54	Bessel's Zones.

CONSTANTS FOR THE REDUCTION OF FIXED STARS.

These constants are prepared from the Logarithms A, B, C, and D, of the American Ephemeris and Nautical Almanac for the year 1863. The epoch to which the observations are reduced by them is 1860.0. The instant, 1860.0, is assumed to be January 0*d*.414, mean time, Washington, the moment when the Sun's mean longitude was 280°. The notation and form of publication is similar to that published in volume III of the Washington Observations, and the auxiliary tables used in the reductions are similar to those of that volume.

CONSTANTS FOR THE REDUCTION OF FIXED STARS.

EPOCH MEAN MIDNIGHT, WASHINGTON.

DATE.	SID. T.	G.	H.		LOG. *g*.		LOG. *h*.	LOG. *i*.		*f*.		*t*.	*p*.	☽	☽—Γ'.
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
Jan. 1	6.76	12 9 48	11 18 8	226	1.82716	45	1.3092	0.2057	360	—10.279	11	— 3.003	.0066	70	158
2	6.82	12 9 48	11 14 22	226	1.82761	45	1.3090	0.2417	335	10.290	11	3.006	.0066	82	171
3	6.89	12 9 47	11 10 36	226	1.82806	45	1.3087	0.2752	313	10.301	11	3.009	.0066	94	185
4	6.95	12 9 46	11 6 50	227	1.82851	45	1.3084	0.3065	293	10.312	11	3.012	.0066	105	198
5	7.01	12 9 45	11 3 3	227	1.82896	46	1.3081	0.3358	272	10.323	10	3.015	.0066	117	211
6	7.08	12 9 44	10 59 16	227	1.82942	44	1.3078	0.3630	253	10.333	11	3.017	.0066	129	224
7	7.14	12 9 43	10 55 29	228	1.82986	44	1.3075	0.3883	237	10.344	11	3.020	.0067	141	237
8	7.21	12 9 42	10 51 41	228	1.83030	44	1.3071	0.4120	224	10.355	10	3.023	.0067	154	250
9	7.27	12 9 41	10 47 53	228	1.83074	43	1.3067	0.4344	212	10.365	10	3.025	.0067	166	263
10	7.34	12 9 39	10 44 5	229	1.83117	43	1.3063	0.4556	202	10.375	10	3.028	.0067	179	276
11	7.41	12 9 37	10 40 16	230	1.83160	43	1.3059	0.4758	193	10.385	11	3.031	.0067	192	289
12	7.47	12 9 36	10 36 26	230	1.83203	42	1.3055	0.4951	182	10.396	10	3.034	.0067	205	302
13	7.54	12 9 34	10 32 36	230	1.83245	42	1.3050	0.5133	172	10.406	10	3.037	.0067	219	315
14	7.61	12 9 32	10 28 46	231	1.83287	42	1.3045	0.5305	164	10.416	10	3.039	.0067	233	328
15	7.67	12 9 30	10 24 55	231	1.83329	41	1.3040	0.5469	156	10.426	10	3.042	.0067	247	341
16	7.74	12 9 28	10 21 4	232	1.83370	41	1.3035	0.5625	150	10.436	10	3.045	.0067	262	354
17	7.80	12 9 26	10 17 12	232	1.83411	41	1.3030	0.5775	145	10.446	10	3.047	.0067	277	7
18	7.87	12 9 24	10 13 20	233	1.83452	40	1.3025	0.5920	138	10.456	10	3.050	.0068	292	20
19	7.93	12 9 22	10 9 27	233	1.83492	40	1.3019	0.6058	132	10.466	10	3.053	.0068	307	34
20	8.00	12 9 20	10 5 34	234	1.83532	40	1.3014	0.6190	127	10.476	9	3.056	.0068	322	47
21	8.07	12 9 17	10 1 40	235	1.83572	39	1.3008	0.6317	122	10.485	10	3.058	.0068	336	60
22	8.13	12 9 15	9 57 45	236	1.83611	38	1.3002	0.6439	117	10.495	9	3.061	.0068	351	73
23	8.20	12 9 12	9 53 49	236	1.83649	38	1.2996	0.6556	113	10.504	9	3.064	.0068	4	86
24	8.27	12 9 9	9 49 53	236	1.83687	38	1.2990	0.6669	109	10.513	9	3.067	.0068	18	99
25	8.33	12 9 7	9 45 57	237	1.83725	38	1.2984	0.6778	106	10.522	9	3.069	.0069	30	112
26	8.40	12 9 4	9 42 0	237	1.83763	37	1.2978	0.6884	101	10.531	9	3.072	.0069	43	125
27	8.47	12 9 1	9 38 3	238	1.83800	37	1.2972	0.6985	96	10.540	9	3.075	.0069	55	138
28	8.53	12 8 59	9 34 5	238	1.83837	36	1.2966	0.7081	93	10.549	9	3.078	.0069	67	151
29	8.60	12 8 56	9 30 7	239	1.83873	35	1.2960	0.7174	91	10.558	9	3.080	.0069	79	164
30	8.66	12 8 53	9 26 8	240	1.83908	35	1.2954	0.7265	88	10.567	8	3.083	.0069	90	177
31	8.73	12 8 51	9 22 8	241	1.83943	35	1.2947	0.7353	84	10.575	9	3.086	.0069	102	190
Feb. 1	8.79	12 8 48	9 18 7	241	1.83978	34	1.2941	0.7437	82	10.584	9	3.089	.0069	114	203
2	8.86	12 8 45	9 14 6	242	1.84012	34	1.2934	0.7519	78	10.593	8	3.091	.0070	126	216
3	8.93	12 8 43	9 10 4	242	1.84046	33	1.2928	0.7597	75	10.601	8	3.094	.0070	138	229
4	8.99	12 8 40	9 6 2	242	1.84079	33	1.2921	0.7672	73	10.609	8	3.097	.0070	151	242
5	9.06	12 8 38	9 2 0	244	1.84112	33	1.2914	0.7745	70	10.617	8	3.099	.0070	163	255
6	9.13	12 8 35	8 57 56	245	1.84145	32	1.2908	0.7815	68	10.625	8	3.102	.0070	176	268
7	9.19	12 8 33	8 53 51	246	1.84177	32	1.2901	0.7883	66	10.633	8	3.105	.0070	189	282
8	9.26	12 8 30	8 49 45	246	1.84209	31	1.2894	0.7949	64	10.641	8	3.108	.0070	202	295
9	9.32	12 8 27	8 45 39	247	1.84240	30	1.2888	0.8013	60	10.649	7	3.110	.0071	216	308
10	9.39	12 8 25	8 41 32	248	1.84270	30	1.2881	0.8073	59	10.656	8	3.113	.0071	229	321
11	9.45	12 8 22	8 37 24	248	1.84300	30	1.2875	0.8132	58	10.664	8	3.116	.0071	243	334
12	9.52	12 8 19	8 33 16	249	1.84330	30	1.2869	0.8190	55	10.672	7	3.119	.0071	257	347
13	9.58	12 8 17	8 29 7	249	1.84360	29	1.2862	0.8245	52	10.679	7	3.121	.0071	271	0
14	9.65	12 8 15	8 24 58	250	1.84389	30	1.2856	0.8297	49	10.686	7	3.124	.0071	286	13
15	9.71	12 8 13	8 20 48	250	1.84419	29	1.2849	0.8346	48	10.693	7	3.127	.0071	301	26
16	9.78	12 8 11	8 16 38	251	1.84448	29	1.2843	0.8394	47	10.700	7	3.130	.0071	315	39
17	9.85	12 8 9	8 12 27	251	1.84477	28	1.2837	0.8441	46	10.707	7	3.132	.0072	330	52
18	9.91	12 8 7	8 8 16	252	1.84505	27	1.2831	0.8487	43	10.714	7	3.135	.0072	345	66
19	9.98	12 8 5	8 4 4	252	1.84532	26	1.2825	0.8530	40	10.721	7	3.138	.0072	359	79
20	10.04	12 8 3	7 59 52	253	1.84558	26	1.2819	0.8570	38	10.728	7	3.141	.0072	12	92
21	10.11	12 8 1	7 55 39	254	1.84584	26	1.2813	0.8608	37	10.735	7	3.143	.0072	26	105
22	10.17	12 7 59	7 51 25	255	1.84610	26	1.2807	0.8645	36	10.742	6	3.146	.0072	39	118
23	10.24	12 7 57	7 47 10	255	1.84636	26	1.2802	0.8681	36	10.748	6	3.149	.0072	51	131
24	10.30	12 7 56	7 42 55	255	1.84662	26	1.2797	0.8717	34	10.754	6	3.152	.0072	63	144
25	10.37	12 7 55	7 38 40	256	1.84688	25	1.2792	0.8751	31	10.760	7	3.154	.0072	75	157
26	10.43	12 7 53	7 34 24	256	1.84713	25	1.2787	0.8782	29	10.767	6	3.157	.0073	87	170
27	10.50	12 7 52	7 30 8	257	1.84738	25	1.2782	0.8811	27	10.773	6	3.160	.0073	99	183
28	10.56	12 7 51	7 25 51		1.84763		1.2778	0.8838		—10.779		— 3.163	.0073	110	196

EPOCH MEAN MIDNIGHT. WASHINGTON.

Date.	Sid. T.	G.	H.		Log. g.		Log. h.	Log. i.		f.		t.	p.	☽	☽—Γ′
1862.	h.	h. m. s.	h. m. s.							s.		y.		°	°
Mar. 1	10.63	12 7 50	7 21 34	258	1.84787	24	1.2773	0.8865	26	—10.785	6	— 3.165	.0073	122	209
2	10.70	12 7 49	7 17 16	258	1.84811	24	1.2769	0.8891	24	10.791	6	3.167	.0073	135	222
3	10.76	12 7 48	7 12 58	258	1.84835	24	1.2765	0.8915	23	10.797	6	3.170	.0073	147	235
4	10.83	12 7 48	7 8 40	259	1.84859	24	1.2761	0.8938	21	10.803	5	3.172	.0073	160	248
5	10.89	12 7 47	7 4 21	258	1.84883	24	1.2757	0.8959	19	10.808	6	3.175	.0074	173	261
6	10.96	12 7 47	7 0 3	259	1.84907	23	1.2753	0.8978	18	10.814	6	3.178	.0074	186	274
7	11.02	12 7 46	6 55 44	259	1.84930	23	1.2751	0.8996	16	10.820	5	3.181	.0074	199	287
8	11.09	12 7 46	6 51 25	259	1.84953	23	1.2748	0.9012	15	10.825	6	3.183	.0074	213	300
9	11.16	12 7 46	6 47 6	259	1.84976	23	1.2745	0.9027	14	10.831	6	3.186	.0074	227	313
10	11.23	12 7 46	6 42 47	259	1.84999	23	1.2743	0.9041	13	10.837	6	3.189	.0074	241	326
11	11.29	12 7 46	6 38 28	260	1.85022	23	1.2741	0.9054	11	10.843	6	3.192	.0074	254	339
12	11.36	12 7 46	6 34 8	260	1.85045	22	1.2739	0.9065	9	10.849	5	3.195	.0074	268	352
13	11.42	12 7 47	6 29 48	260	1.85067	22	1.2737	0.9074	8	10.854	6	3.197	.0075	282	5
14	11.48	12 7 47	6 25 28	260	1.85089	22	1.2735	0.9082	7	10.860	5	3.200	.0075	297	19
15	11.55	12 7 48	6 21 8	260	1.85111	22	1.2734	0.9089	6	10.865	6	3.202	.0075	311	32
16	11.61	12 7 48	6 16 48	260	1.85133	21	1.2733	0.9095	5	10.871	5	3.205	.0075	325	45
17	11.68	12 7 49	6 12 28	260	1.85154	22	1.2732	0.9100	3	10.876	6	3.208	.0075	340	58
18	11.74	12 7 50	6 8 8	259	1.85176	21	1.2732	0.9103	2	10.882	5	3.211	.0075	354	71
19	11.81	12 7 51	6 3 49	259	1.85197	22	1.2731	0.9105	1	10.887	5	3.214	.0075	7	84
20	11.87	12 7 52	5 59 30	259	1.85219	22	1.2731	0.9106	1	10.892	6	3.216	.0076	21	97
21	11.94	12 7 53	5 55 11	259	1.85241	22	1.2732	0.9105	2	10.898	5	3.219	.0076	34	110
22	12.01	12 7 55	5 50 52	259	1.85263	22	1.2732	0.9103	3	10.903	6	3.222	.0076	47	123
23	12.07	12 7 57	5 46 33	259	1.85285	21	1.2733	0.9100	5	10.909	6	3.225	.0076	58	136
24	12.14	12 7 59	5 42 14	258	1.85306	21	1.2734	0.9095	6	10.915	5	3.227	.0076	71	149
25	12.21	12 8 1	5 37 56	258	1.85327	22	1.2735	0.9089	7	10.920	6	3.230	.0076	83	162
26	12.27	12 8 3	5 33 38	258	1.85349	22	1.2736	0.9082	9	10.926	5	3.233	.0076	95	175
27	12.34	12 8 5	5 29 20	257	1.85371	22	1.2737	0.9073	10	10.931	6	3.236	.0077	107	188
28	12.40	12 8 7	5 25 3	257	1.85393	24	1.2739	0.9063	11	10.937	5	3.238	.0077	118	202
29	12.47	12 8 9	5 20 46	257	1.85417	23	1.2741	0.9052	12	10.942	5	3.241	.0077	131	215
30	12.54	12 8 11	5 16 29	257	1.85440	22	1.2743	0.9040	14	10.947	6	3.243	.0077	143	228
31	12.60	12 8 14	5 12 12	256	1.85462	23	1.2746	0.9026	16	10.953	5	3.246	.0077	155	241
Apr. 1	12.67	12 8 17	5 7 56	256	1.85485	23	1.2749	0.9010	16	10.958	6	3.249	.0077	168	254
2	12.73	12 8 20	5 3 40	255	1.85508	23	1.2752	0.8994	18	10.964	6	3.251	.0077	182	267
3	12.80	12 8 23	4 59 25	254	1.85531	23	1.2755	0.8976	20	10.970	5	3.254	.0078	195	280
4	12.87	12 8 26	4 55 11	254	1.85554	23	1.2758	0.8956	20	10.975	6	3.257	.0078	209	293
5	12.93	12 8 29	4 50 57	253	1.85577	23	1.2761	0.8936	22	10.981	6	3.260	.0078	223	306
6	13.00	12 8 32	4 46 44	253	1.85600	24	1.2765	0.8914	23	10.987	6	3.263	.0078	237	319
7	13.07	12 8 35	4 42 31	253	1.85624	24	1.2769	0.8891	25	10.993	6	3.265	.0078	251	332
8	13.13	12 8 38	4 38 18	252	1.85648	24	1.2773	0.8866	26	10.999	6	3.268	.0078	266	345
9	13.20	12 8 42	4 34 6	253	1.85672	24	1.2777	0.8840	28	11.005	6	3.271	.0078	280	358
10	13.26	12 8 46	4 29 55	251	1.85696	24	1.2782	0.8812	29	11.011	6	3.274	.0078	293	11
11	13.33	12 8 50	4 25 44	250	1.85720	25	1.2787	0.8783	30	11.017	6	3.277	.0078	308	24
12	13.39	12 8 53	4 21 34	249	1.85745	25	1.2792	0.8753	32	11.023	6	3.279	.0079	322	37
13	13.45	12 8 57	4 17 25	248	1.85790	26	1.2797	0.8721	34	11.029	7	3.282	.0079	336	50
14	13.52	12 9 1	4 13 17	247	1.85816	25	1.2802	0.8687	35	11.036	6	3.285	.0079	349	64
15	13.58	12 9 5	4 9 10	246	1.85841	25	1.2807	0.8652	36	11.042	7	3.287	.0079	3	77
16	13.65	12 9 9	4 5 4	245	1.85846	26	1.2812	0.8616	38	11.049	6	3.290	.0079	16	90
17	13.72	12 9 13	4 0 59	245	1.85872	26	1.2817	0.8578	39	11.055	7	3.293	.0079	29	103
18	13.79	12 9 17	3 56 54	244	1.85898	27	1.2823	0.8539	41	11.062	6	3.295	.0079	42	116
19	13.85	12 9 21	3 52 50	243	1.85925	27	1.2829	0.8498	43	11.068	7	3.298	.0079	54	129
20	13.92	12 9 25	3 48 47	243	1.85952	28	1.2835	0.8455	45	11.075	7	3.301	.0079	67	142
21	13.98	12 9 30	3 44 44	241	1.85980	27	1.2841	0.8410	46	11.082	7	3.304	.0080	79	155
22	14.05	12 9 34	3 40 43	241	1.86007	28	1.2847	0.8364	48	11.089	7	3.307	.0080	91	168
23	14.11	12 9 39	3 36 42	241	1.86035	28	1.2853	0.8316	50	11.096	7	3.309	.0080	102	181
24	14.18	12 9 43	3 32 41	241	1.86063	28	1.2859	0.8266	52	11.103	7	3.312	.0080	114	194
25	14.24	12 9 47	3 28 40	240	1.86091	29	1.2865	0.8214	53	11.110	7	3.315	.0080	126	207
26	14.31	12 9 52	3 24 40	239	1.86120	29	1.2871	0.8161	54	11.117	7	3.318	.0080	138	220
27	14.37	12 9 56	3 20 41	238	1.86149	29	1.2877	0.8107	56	11.124	7	3.321	.0080	151	234
28	14.44	12 10 1	3 16 43	236	1.86178	30	1.2883	0.8051	59	11.131	8	3.324	.0081	164	247
29	14.51	12 10 6	3 12 47	234	1.86208	30	1.2889	0.7992	62	11.139	7	3.326	.0081	177	260
0	14.57	12 10 10	3 8 53		1.86238		1.2895	0.7930		—11.146		— 3.329	.0081	190	273

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.	Sid. T.	G.	H.		Log. g.		Log. h.	Log. i.		f.		t.	p.	☽	☽—Γ'.
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
May 1	14.64	12 10 15	3 5 0	233	1.86268	30	1.2902	0.7864	66	—11.154	8	— 3.332	.0081	204	286
2	14.71	12 10 20	3 1 7	232	1.86298	31	1.2909	0.7798	68	11.162	8	3.335	.0081	218	299
3	14.77	12 10 25	2 57 15	232	1.86329	31	1.2916	0.7730	70	11.170	8	3.338	.0081	232	312
4	14.84	12 10 30	2 53 23	234	1.86360	32	1.2922	0.7660	73	11.178	8	3.340	.0081	246	325
5	14.91	12 10 34	2 49 31	231	1.86392	33	1.2928	0.7587	74	11.186	8	3.343	.0082	261	338
6	14.97	12 10 38	2 45 40	230	1.86425	32	1.2934	0.7513	78	11.194	8	3.345	.0082	275	351
7	15.04	12 10 43	2 41 50	230	1.86457	32	1.2941	0.7435	81	11.202	8	3.348	.0082	290	4
8	15.10	12 10 47	2 38 0	229	1.86489	33	1.2947	0.7354	83	11.210	8	3.350	.0082	305	17
9	15.17	12 10 52	2 34 11	228	1.86522	33	1.2953	0.7271	85	11.218	8	3.353	.0082	319	30
10	15.23	12 10 56	2 30 23	227	1.86555	33	1.2959	0.7186	88	11.226	9	3.356	.0082	333	43
11	15.30	12 11 0	2 26 36	226	1.86588	34	1.2965	0.7098	92	11.235	8	3.359	.0082	346	56
12	15.37	12 11 5	2 22 50	225	1.86622	34	1.2971	0.7006	95	11.243	8	3.362	.0082	359	70
13	15.43	12 11 9	2 19 5	225	1.86656	34	1.2977	0.6911	99	11.251	9	3.364	.0083	13	83
14	15.50	12 11 13	2 15 20	224	1.86690	34	1.2983	0.6812	102	11.260	9	3.367	.0083	26	96
15	15.56	12 11 17	2 11 36	224	1.86724	35	1.2989	0.6710	104	11.269	9	3.370	.0083	38	109
16	15.63	12 11 21	2 7 52	223	1.86759	34	1.2994	0.6606	111	11.278	9	3.373	.0083	51	122
17	15.69	12 11 25	2 4 9	222	1.86793	33	1.3000	0.6495	113	11.287	9	3.375	.0083	63	135
18	15.76	12 11 29	2 0 27	221	1.86826	34	1.3005	0.6382	118	11.296	9	3.378	.0083	75	148
19	15.82	12 11 33	1 56 46	222	1.86860	34	1.3010	0.6264	122	11.305	9	3.381	.0083	87	161
20	15.89	12 11 37	1 53 4	220	1.86894	34	1.3015	0.6142	125	11.314	10	3.383	.0083	99	174
21	15.95	12 11 41	1 49 24	219	1.86938	36	1.3020	0.6017	132	11.324	9	3.386	.0084	111	187
22	16.02	12 11 45	1 45 45	219	1.86974	36	1.3025	0.5885	137	11.333	10	3.389	.0084	123	200
23	16.08	12 11 48	1 42 6	218	1.87060	37	1.3030	0.5748	142	11.343	9	3.391	.0084	135	213
24	16.15	12 11 52	1 38 28	218	1.87047	37	1.3035	0.5606	148	11.352	9	3.394	.0084	147	226
25	16.21	12 11 56	1 34 50	218	1.87084	37	1.3040	0.5458	157	11.361	10	3.397	.0084	159	239
26	16.28	12 11 59	1 31 12	217	1.87121	37	1.3044	0.5301	164	11.371	9	3.400	.0084	172	252
27	16.35	12 12 3	1 27 35	216	1.87158	37	1.3049	0.5137	171	11.380	10	3.403	.0084	185	266
28	16.41	12 12 6	1 23 59	216	1.87195	38	1.3053	0.4966	179	11.390	10	3.405	.0084	198	279
29	16.48	12 12 10	1 20 23	216	1.87233	38	1.3058	0.4787	187	11.400	10	3.408	.0085	211	292
30	16.54	12 12 13	1 16 47	215	1.87271	39	1.3062	0.4600	192	11.410	10	3.411	.0085	226	205
31	16.61	12 12 16	1 13 12	215	1.87310	38	1.3066	0.4408	207	11.420	11	3.414	.0085	240	318
June 1	16.67	12 12 19	1 9 37	214	1.87348	39	1.3070	0.4201	218	11.431	10	3.416	.0085	255	331
2	16.74	12 12 22	1 6 3	213	1.87387	38	1.3074	0.3983	230	11.441	10	3.419	.0085	270	344
3	16.80	12 12 25	1 2 30	213	1.87425	39	1.3077	0.3753	245	11.451	9	3.421	.0085	285	357
4	16.87	12 12 27	0 58 57	213	1.87464	39	1.3080	0.3508	263	11.460	10	3.424	.0085	300	10
5	16.94	12 12 29	0 55 24	213	1.87503	39	1.3083	0.3245	281	11.470	10	3.427	.0086	315	13
6	17.00	12 12 32	0 51 51	212	1.87542	39	1.3086	0.2964	299	11.480	10	3.430	.0086	329	36
7	17.07	12 12 34	0 48 19	212	1.87581	39	1.3089	0.2665	322	11.490	11	3.432	.0086	343	49
8	17.13	12 12 36	0 44 47	212	1.87620	39	1.3091	0.2343	351	11.501	10	3.435	.0086	356	62
9	17.20	12 12 38	0 41 15	211	1.87659	39	1.3093	0.1992	381	11.511	10	3.438	.0086	9	75
10	17.27	12 12 40	0 37 44	212	1.87698	39	1.3095	0.1611	422	11.521	11	3.441	.0086	22	88
11	17.33	12 12 42	0 34 12	211	1.87737	39	1.3097	0.1189	470	11.532	10	3.444	.0086	35	102
12	17.40	12 12 44	0 30 41	211	1.87776	40	1.3099	0.0719	524	11.542	10	3.446	.0087	47	115
13	17.47	12 12 46	0 27 10	211	1.87816	39	1.3101	0.0195	600	11.552	11	3.449	.0087	59	128
14	17.53	12 12 47	0 23 39	211	1.87855	39	1.3102	9.9595	690	11.563	10	3.452	.0087	71	141
15	17.60	12 12 48	0 20 8	211	1.87894	39	1.3103	9.8905	830	11.573	10	3.455	.0087	83	154
16	17.67	12 12 50	0 16 37	211	1.87933	39	1.3104	9.8075	1025	11.583	11	3.457	.0087	95	167
17	17.73	12 12 51	0 13 6	210	1.87972	40	1.3105	9.7050	1345	11.594	11	3.460	.0087	107	180
18	17.80	12 12 52	0 9 36	210	1.88012	39	1.3106	9.5705	1976	11.605	10	3.463	.0088	119	193
19	17.87	12 12 53	0 6 6	210	1.88051	39	1.3106	9.3729	3718	11.615	10	3.465	.0088	131	206
20	17.93	12 12 54	0 2 36	211	1.88090	39	1.3106	9.0011		11.625	11	3.468	.0088	143	269
21	18.00	12 12 55	23 59 5	210	1.88129	40	1.3106	n 8.5441		11.636	10	3.471	.0088	155	232
22	18.07	12 12 56	23 55 35	211	1.88169	39	1.3106	9.2304	2539	11.646	11	3.474	.0088	157	245
23	18.13	12 12 57	23 52 4	210	1.88208	39	1.3105	9.4843	1601	11.657	10	3.476	.0088	180	258
24	18.20	12 12 57	23 48 34	210	1.88247	39	1.3105	9.6444	1163	11.667	11	3.479	.0088	193	271
25	18.26	12 12 57	23 45 4	211	1.88286	39	1.3104	9.7609	916	11.678	10	3.482	.0088	206	284
26	18.33	12 12 57	23 41 33	210	1.88325	39	1.3103	9.8525	754	11.688	11	3.485	.0089	220	298
27	18.39	12 12 58	23 38 3	211	1.88364	38	1.3102	9.9279	642	11.699	11	3.487	.0089	234	311
28	18.46	12 12 57	23 34 32	210	1.88402	39	1.3101	9.9921	556	11.710	10	3.490	.0089	249	324
29	18.52	12 12 57	23 31 2	210	1.88441	38	1.3100	0.0477	489	11.720	10	3.493	.0089	264	337
30	18.58	12 12 57	23 27 32		1.88479		1.3098	n 0.0966		—11.730		— 3.496	.0089	279	350

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]		f.		ε.	p.	☽	☽—P.
		h. m. s.	h. m. s.							s.		y.		°	°
July 1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—3.499	[illegible]	293	3
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.501	[illegible]	309	16
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.504	[illegible]	324	29
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.507	[illegible]	338	42
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.510	[illegible]	352	55
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.512	[illegible]	6	68
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.515	[illegible]	20	81
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.518	[illegible]	33	94
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.520	[illegible]	45	107
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.523	[illegible]	57	120
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.525	[illegible]	69	133
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.527	.0091	81	147
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.530	.0091	93	160
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.533	.0091	104	173
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.536	.0091	116	186
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.538	.0091	128	199
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.541	.0091	140	212
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.543	.0091	152	215
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.546	.0091	164	228
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.548	[illegible]	177	241
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.551	[illegible]	189	264
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.554	[illegible]	202	277
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.557	[illegible]	215	290
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.560	[illegible]	229	303
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.563	[illegible]	243	316
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.566	[illegible]	257	329
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.569	[illegible]	272	343
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.572	[illegible]	287	356
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.575	[illegible]	301	9
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.578	[illegible]	317	22
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.580	[illegible]	332	35
Aug. 1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.583	.0093	347	48
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.041	[illegible]	3.586	.0093	1	61
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.049	[illegible]	3.589	.0094	15	74
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9	3.592	.0094	28	87
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.594	.0094	41	100
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.597	.0094	54	113
7	[illegible]	12 11 54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.599	.0094	66	126
8	[illegible]	12 11 52	[illegible] 5 34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.601	.0094	78	139
9	21.21	12 11 5[illegible]	[illegible] 1 44	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.604	.0094	90	152
10	21.27	12 11 4[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	64	12.106	[illegible]	3.606	.0095	101	165
11	21.34	12 11 45	20 54 1	232	[illegible]	36	[illegible]	[illegible]	62	12.113	7	3.609	.0095	113	179
12	21.40	12 11 43	20 50 [illegible]	233	[illegible]	36	[illegible]	[illegible]	61	12.120	8	3.612	.0095	125	192
13	21.47	12 11 41	20 46 15	235	1.[illegible]15	36	[illegible]	[illegible]	59	12.128	7	3.615	.0095	137	205
14	21.53	12 11 39	20 42 [illegible]	[illegible]	1.[illegible]41	[illegible]	[illegible]	[illegible]	57	12.135	8	3.618	.0095	149	218
15	21.60	12 11 37	20 38 24	[illegible]	[illegible]	25	[illegible]	[illegible]	54	12.143	7	3.620	.0095	161	231
16	21.66	12 11 35	20 34 [illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	53	12.150	7	3.623	.0095	174	244
17	21.73	12 11 32	20 30 21	[illegible]	1.90017	25	[illegible]	[illegible]	51	12.157	7	3.626	.0095	186	257
18	21.79	12 11 30	20 26 34	[illegible]	1.90042	25	[illegible]	[illegible]	48	12.164	7	3.629	.0096	199	270
19	21.86	12 11 2[illegible]	20 22 36	[illegible]	[illegible]	24	1.2851	0.8325	47	12.171	7	3.632	.0096	212	283
20	21.93	12 11 26	20 1[illegible] 3[illegible]	239	1.90091	24	1.2845	0.8372	46	12.178	6	3.634	.0096	225	296
21	21.99	12 11 24	20 14 39	240	1.90115	23	[illegible]	[illegible]	44	12.184	7	3.637	.0096	239	309
22	22.05	12 11 22	20 10 39	241	[illegible]	23	1.2834	[illegible]	42	12.191	6	3.640	.0096	253	322
23	22.12	12 11 20	20 6 3[illegible]	242	1.90151	23	[illegible]	0.8504	40	12.197	7	3.642	.0096	266	335
24	22.18	12 11 19	20 2 36	243	[illegible]	23	1.2822	0.8544	38	12.204	7	3.645	.0097	281	348
25	22.25	12 11 17	19 58 33	244	[illegible]	23	1.2817	[illegible]	37	12.211	6	3.648	.0097	296	1
26	22.31	12 11 16	19 54 29	244	1.90230	21	1.2811	0.8659	37	12.217	6	3.650	.0097	311	15
	38	12 11 14	19 50 25	244	1.90251	22	1.2806	0.8656	35	12.223	6	3.653	.0097	326	28
	44	12 11 13	19 46 21	245	1.90273	22	1.2801	0.8691	32	12.229	6	3.656	.0097	341	41
	51	12 11 12	19 42 16	245	1.90295	21	1.2796	0.8723	31	12.235	6	3.659	.0097	355	54
	58	12 11 10	19 38 11	246	1.90316	21	1.2792	0.8754	30	12.241	5	3.662	.0098	10	67
	34	12 11 9	19 34 5		1.90337		1.2788	0.8784		—12.246		—3.665	.0098	23	80

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Date.	Sid. T.	G.	H.		Log. g.		Log. h.	Log. i.		f.		t.	p.	☽	☽—Γ'.
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
Sept. 1	22.71	12 11 8	19 29 58	247	1.90358	21	1.2780	n 0.8813	27	− 12.252	7	− 3.667	.0098	37	93
2	22.78	12 11 7	19 25 51	247	1.90379	21	1.2776	0.8840	26	12.259	6	3.670	.0098	50	106
3	22.86	12 11 6	19 21 44	249	1.90400	20	1.2773	0.8866	24	12.265	6	3.673	.0098	62	119
4	22.93	12 11 5	19 17 35	251	1.90420	20	1.2769	0.8890	23	12.271	5	3.675	.0098	74	132
5	23.00	12 11 4	19 13 24	252	1.90440	20	1.2765	0.8913	22	12.276	6	3.678	.0099	86	145
6	23.07	12 11 3	19 9 12	252	1.90460	20	1.2762	0.8935	21	12.282	6	3.681	.0099	98	158
7	23.13	12 11 3	19 5 0	252	1.90480	19	1.2758	0.8956	19	12.288	6	3.683	.0099	110	171
8	23.19	12 11 2	19 0 48	252	1.90499	20	1.2755	0.8975	18	12.294	5	3.686	.0099	122	184
9	23.25	12 11 2	18 56 36	252	1.90519	19	1.2752	0.8993	16	12.299	6	3.688	.0099	134	197
10	23.32	12 11 2	18 52 24	253	1.90538	20	1.2749	0.9009	15	12.305	5	3.691	.0099	146	210
11	23.38	12 11 1	18 48 11	253	1.90558	20	1.2746	0.9024	14	12.310	6	3.694	.0100	158	223
12	23.45	12 11 1	18 43 58	252	1.90578	19	1.2743	0.9038	12	12.316	5	3.697	.0100	171	237
13	23.51	12 11 1	18 39 44	254	1.90597	19	1.2741	0.9050	11	12.321	6	3.700	.0100	183	250
14	23.58	12 11 1	18 35 30	255	1.90616	19	1.2739	0.9061	10	12.327	6	3.702	.0100	196	263
15	23.64	12 11 2	18 31 15	255	1.90635	19	1.2737	0.9071	9	12.333	5	3.705	.0100	209	276
16	23.71	12 11 2	18 27 0	255	1.90654	19	1.2735	0.9080	8	12.338	5	3.708	.0100	222	289
17	23.77	12 11 2	18 22 45	257	1.90673	19	1.2734	0.9088	6	12.343	5	3.711	.0100	236	302
18	23.84	12 11 3	18 18 28	256	1.90692	19	1.2733	0.9094	4	12.348	5	3.714	.0100	249	315
19	23.90	12 11 3	18 14 12	256	1.90711	19	1.2733	0.9098	3	12.353	6	3.716	.0101	263	328
20	23.97	12 11 4	18 9 56	256	1.90730	18	1.2732	0.9101	2	12.359	5	3.719	.0101	277	341
21	0.04	12 11 5	18 5 40	256	1.90748	19	1.2732	0.9103	1	12.364	5	3.722	.0101	291	354
22	0.10	12 11 6	18 1 24	256	1.90767	18	1.2731	0.9104	1	12.369	6	3.725	.0101	306	7
23	0.16	12 11 7	17 57 8	256	1.90785	19	1.2731	0.9105	1	12.375	5	3.728	.0101	320	20
24	0.23	12 11 8	17 52 52	256	1.90804	18	1.2731	0.9104	3	12.380	6	3.730	.0101	335	33
25	0.30	12 11 10	17 48 36	256	1.90822	19	1.2731	0.9101	4	12.386	5	3.733	.0101	350	46
26	0.37	12 11 11	17 44 20	256	1.90841	19	1.2732	0.9097	5	12.391	5	3.736	.0101	4	59
27	0.43	12 11 12	17 40 4	256	1.90860	18	1.2733	0.9092	7	12.396	5	3.738	.0102	18	73
28	0.49	12 11 14	17 35 48	257	1.90878	19	1.2735	0.9085	8	12.401	6	3.741	.0102	32	86
29	0.56	12 11 15	17 31 31	256	1.90897	19	1.2737	0.9077	9	12.407	5	3.743	.0102	45	99
30	0.62	12 11 17	17 27 15	257	1.90916	20	1.2738	0.9068	11	12.412	5	3.746	.0102	58	102
Oct. 1	0.68	12 11 19	17 22 58	257	1.90936	19	1.2740	0.9057	12	12.417	6	3.749	.0102	70	125
2	0.75	12 11 21	17 18 41	257	1.90955	20	1.2742	0.9045	12	12.423	5	3.752	.0102	82	139
3	0.82	12 11 23	17 14 24	256	1.90975	19	1.2745	0.9033	14	12.428	6	3.755	.0102	94	152
4	0.89	12 11 25	17 10 8	256	1.90994	19	1.2748	0.9019	16	12.434	5	3.757	.0103	106	165
5	0.95	12 11 27	17 5 52	256	1.91013	20	1.2751	0.9003	17	12.439	6	3.760	.0103	118	178
6	1.02	12 11 30	17 1 36	256	1.91033	20	1.2754	0.8986	19	12.445	6	3.763	.0103	130	191
7	1.08	12 11 32	16 57 20	256	1.91053	20	1.2757	0.8967	21	12.451	5	3.766	.0103	142	204
8	1.15	12 11 35	16 53 4	255	1.91073	21	1.2760	0.8946	22	12.456	6	3.769	.0103	154	216
9	1.21	12 11 37	16 48 49	255	1.91094	21	1.2764	0.8924	23	12.462	5	3.771	.0103	167	229
10	1.28	12 11 40	16 44 34	254	1.91105	21	1.2768	0.8901	24	12.467	6	3.774	.0104	179	242
11	1.35	12 11 43	16 40 20	254	1.91126	21	1.2772	0.8877	25	12.473	6	3.777	.0104	192	255
12	1.41	12 11 46	16 36 6	254	1.91147	21	1.2776	0.8852	27	12.479	6	3.779	.0104	205	268
13	1.48	12 11 49	16 31 52	253	1.91178	22	1.2780	0.8825	29	12.485	6	3.782	.0104	219	282
14	1.54	12 11 52	16 27 39	253	1.91200	22	1.2785	0.8796	31	12.491	6	3.784	.0104	232	295
15	1.61	12 11 55	16 23 26	253	1.91222	22	1.2790	0.8765	32	12.497	6	3.787	.0104	246	308
16	1.67	12 11 59	16 19 13	253	1.91244	22	1.2795	0.8733	33	12.503	6	3.790	.0105	260	321
17	1.74	12 12 2	16 15 0	252	1.91266	22	1.2800	0.8700	34	12.509	6	3.793	.0105	274	334
18	1.80	12 12 6	16 10 48	252	1.91288	23	1.2805	0.8666	36	12.515	6	3.796	.0105	288	347
19	1.87	12 12 9	16 6 36	251	1.91311	23	1.2810	0.8630	38	12.521	7	3.798	.0105	302	0
20	1.94	12 12 13	16 2 25	250	1.91334	23	1.2816	0.8592	40	12.528	6	3.801	.0105	316	13
21	2.01	12 12 16	15 58 15	250	1.91357	23	1.2821	0.8552	42	12.534	7	3.804	.0105	330	26
22	2.08	12 12 20	15 54 5	249	1.91380	24	1.2827	0.8510	43	12.541	7	3.807	.0105	345	39
23	2.14	12 12 23	15 49 56	248	1.91404	23	1.2833	0.8467	45	12.548	6	3.810	.0105	359	52
24	2.21	12 12 27	15 45 48	248	1.91427	24	1.2839	0.8422	47	12.554	7	3.812	.0106	13	65
25	2.27	12 12 30	15 41 40	247	1.91451	24	1.2846	0.8375	49	12.561	7	3.815	.0106	26	78
26	2.34	12 12 34	15 37 33	247	1.91475	24	1.2852	0.8326	51	12.568	7	3.817	.0106	39	91
27	2.40	12 12 38	15 33 26	246	1.91499	24	1.2858	0.8275	52	12.575	7	3.820	.0106	53	104
28	2.47	12 12 42	15 29 20	245	1.91523	25	1.2864	0.8223	55	12.582	7	3.823	.0106	65	117
29	2.53	12 12 46	15 25 15	245	1.91548	26	1.2870	0.8168	57	12.589	7	3.825	.0106	78	131
30	2.60	12 12 50	15 21 10	245	1.91574	27	1.2876	0.8111	59	12.596	7	3.828	.0107	90	144
31	2.66	12 12 54	15 17 5		1.91601		1.2882	n 0.8052		− 12.603		− 3.831	0107	102	157

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Date.	Sid. T.	G.	H.		Log. g.		Log. h.	Log. i.		f.		t.	p.	☽	☽—Γ'.
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
Nov. 1	2.73	12 12 58	15 13 0	244	1.91628	27	1.2890	n 0.7991	63	—12.611	8	— 3.834	.0107	114	170
2	2.80	12 13 2	15 8 56	243	1.91655	26	1.2897	0.7928	66	12.619	7	3.837	.0107	126	183
3	2.86	12 13 6	15 4 53	242	1.91681	27	1.2903	0.7862	68	12.626	8	3.840	.0107	138	196
4	2.93	12 13 10	15 0 51	241	1.91708	27	1.2910	0.7794	70	12.634	8	3.842	.0107	150	209
5	2.99	12 13 14	14 56 50	241	1.91735	27	1.2917	0.7724	73	12.642	8	3.845	.0108	162	222
6	3.06	12 13 18	14 52 49	241	1.91762	28	1.2923	0.7651	76	12.650	8	3.848	.0108	175	235
7	3.13	12 13 22	14 48 48	240	1.91790	28	1.2929	0.7575	79	12.658	8	3.851	.0108	187	248
8	3.19	12 13 26	14 46 48	239	1.91818	29	1.2936	0.7496	82	12.666	8	3.853	.0108	200	261
9	3.26	12 13 30	14 40 49	238	1.91847	29	1.2942	0.7414	85	12.674	8	3.856	.0108	214	274
10	3.32	12 13 34	14 36 51	237	1.91876	30	1.2948	0.7329	87	12.682	8	3.859	.0108	228	287
11	3.39	12 13 38	14 32 54	237	1.91906	31	1.2954	0.7242	89	12.690	9	3.861	.0109	242	300
12	3.46	12 13 41	14 28 57	237	1.91937	30	1.2961	0.7153	92	12.699	8	3.864	.0109	256	313
13	3.52	12 13 45	14 25 0	236	1.91967	30	1.2967	0.7061	97	12.707	9	3.867	.0109	270	326
14	3.59	12 13 49	14 21 4	237	1.91997	30	1.2973	0.6964	103	12.716	9	3.869	.0109	284	339
15	3.65	12 13 53	14 17 7	236	1.92027	30	1.2980	0.6861	106	12.725	9	3.872	.0109	299	353
16	3.72	12 13 57	14 13 11	235	1.92057	31	1.2986	0.6755	108	12.734	9	3.876	.0109	313	6
17	3.79	12 14 0	14 9 16	234	1.92088	32	1.2992	0.6647	113	12.743	9	3.878	.0109	327	19
18	3.85	12 14 4	14 5 22	233	1.92120	32	1.2998	0.6534	118	12.752	9	3.881	.0110	341	32
19	3.92	12 14 7	14 1 29	233	1.92152	32	1.3004	0.6416	123	12.761	9	3.884	.0110	355	45
20	3.98	12 14 10	13 57 36	232	1.92184	32	1.3010	0.6293	127	12.770	9	3.886	.0110	9	58
21	4.05	12 14 14	13 53 44	232	1.92216	33	1.3015	0.6166	132	12.779	10	3.889	.0110	22	71
22	4.11	12 14 17	13 49 52	231	1.92249	33	1.3020	0.6034	139	12.789	9	3.892	.0110	35	84
23	4.18	12 14 20	13 46 1	231	1.92282	33	1.3026	0.5895	144	12.798	9	3.894	.0110	48	97
24	4.24	12 14 24	13 42 10	230	1.92315	33	1.3031	0.5751	151	12.807	9	3.897	.0111	61	110
25	4.31	12 14 27	13 38 20	230	1.92348	33	1.3036	0.5600	157	12.816	10	3.900	.0111	74	123
26	4.37	12 14 30	13 34 30	230	1.92381	34	1.3041	0.5443	164	12.826	11	3.902	.0111	86	136
27	4.44	12 14 33	13 30 40	229	1.92415	34	1.3046	0.5279	172	12.837	10	3.905	.0111	98	149
28	4.50	12 14 36	13 26 51	228	1.92449	34	1.3051	0.5107	181	12.847	10	3.908	.0111	110	162
29	4.57	12 14 39	13 23 3	228	1.92483	34	1.3055	0.4926	190	12.857	10	3.910	.0111	122	176
30	4.63	12 14 41	13 19 15	228	1.92517	35	1.3060	0.4736	201	12.867	10	3.913	.0112	134	189
Dec. 1	4.70	12 14 44	13 15 27	227	1.92552	35	1.3064	0.4535	214	12.877	10	3.916	.0112	146	202
2	4.76	12 14 46	13 11 40	228	1.92587	35	1.3068	0.4321	225	12.887	10	3.919	.0112	158	215
3	4.83	12 14 49	13 7 52	227	1.92622	35	1.3072	0.4096	238	12.898	10	3.922	.0112	170	228
4	4.89	12 14 51	13 4 5	227	1.92657	35	1.3076	0.3858	254	12.908	10	3.924	.0112	182	241
5	4.96	12 14 53	13 0 18	227	1.92692	35	1.3079	0.3604	272	12.918	10	3.927	.0112	195	254
6	5.03	12 14 55	12 56 31	227	1.92727	36	1.3082	0.3332	291	12.928	11	3.930	.0112	208	267
7	5.09	12 14 57	12 52 44	226	1.92763	35	1.3085	0.3041	316	12.939	10	3.933	.0113	222	280
8	5.16	12 14 59	12 48 58	226	1.92798	35	1.3088	0.2725	340	12.949	11	3.936	.0113	236	293
9	5.23	12 15 1	12 45 12	226	1.92833	36	1.3091	0.2385	371	12.960	10	3.938	.0113	250	306
10	5.29	12 15 3	12 41 26	225	1.92869	35	1.3093	0.2014	406	12.970	11	3.941	.0113	265	319
11	5.36	12 15 5	12 37 41	225	1.92904	36	1.3095	0.1608	449	12.981	10	3.944	.0113	280	332
12	5.43	12 15 6	12 33 56	224	1.92940	36	1.3097	0.1159	503	12.991	11	3.947	.0113	294	346
13	5.49	12 15 8	12 30 12	224	1.92976	36	1.3099	0.0656	570	13.002	10	3.949	.0113	309	359
14	5.56	12 15 9	12 26 28	224	1.93012	36	1.3101	0.0086	656	13.012	11	3.952	.0114	324	12
15	5.63	12 15 10	12 22 44	224	1.93048	36	1.3102	9.9430	779	13.023	11	3.955	.0114	338	25
16	5.69	12 15 11	12 19 0	224	1.93084	37	1.3103	9.8651	949	13.034	11	3.957	.0114	352	38
17	5.76	12 15 12	12 15 16	225	1.93121	36	1.3104	9.7702	1228	13.045	10	3.960	.0114	6	51
18	5.82	12 15 13	12 11 31	225	1.93157	36	1.3104	9.6474	1718	13.055	11	3.963	.0114	19	64
19	5.89	12 15 14	12 7 46	225	1.93193	36	1.3105	9.4756	2881	13.066	11	3.965	.0114	32	77
20	5.95	12 15 14	12 4 1	225	1.93229	37	1.3105	9.1875		13.077	11	3.968	.0115	45	90
21	6.02	12 15 15	12 0 16	224	1.93266	36	1.3106	n 8.0000		13.088	11	3.971	.0115	58	103
22	6.08	12 15 15	11 56 32	224	1.93302	36	1.3106	9.1261	3179	13.099	11	3.974	.0115	70	116
23	6.15	12 15 15	11 52 48	224	1.93338	36	1.3106	9.4440	1813	13.110	10	3.977	.0115	82	129
24	6.21	12 15 16	11 49 4	224	1.93374	36	1.3105	9.6253	1283	13.120	11	3.979	.0115	94	142
25	6.28	12 15 16	11 45 20	224	1.93410	35	1.3104	9.7536	921	13.131	11	3.983	.0116	106	155
26	6.35	12 15 15	11 41 36	224	1.93445	35	1.3103	9.8457	866	13.142	11	3.985	.0116	118	168
27	6.41	12 15 15	11 37 52	225	1.93480	35	1.3102	9.9323	677	13.153	10	3.988	.0116	130	181
28	6.48	12 15 14	11 34 7	225	1.93515	35	1.3101	0.0000	580	13.163	11	3.990	.0116	142	194
29	6.54	12 15 14	11 30 22	226	1.93550	35	1.3100	0.0580	512	13.174	11	3.993	.0116	154	207
30	6.61	12 15 13	11 26 36	226	1.93585	35	1.3098	0.1092	458	13.185	11	3.996	.0117	166	220
31	6.67	12 15 12	11 22 50		1.93620		1.3096	0.1550		—13.196		— 3.998	.0117	178	233

CATALOGUE

OF

STARS OBSERVED

IN THE

YEAR 1863.

U. S. NAVAL OBSERVATORY.

CATALOGUE OF STARS OBSERVED IN THE YEAR 1863.

Number.	Name.		Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1		Lacaille 9732	6.5	0 0 37.32	1	+ 3.070	− 23 17		+ 20.06	
2		Lacaille 9735	5.8	0 0 56.06	1	3.068	− 34 19		20.06	
3	α	Andromedæ		0 1 9.42	13	3.075	+ 28 19 2.4	10	20.06	
4		Weisse XXIII, 1250	8.3	0 1 11.38	2	3.072	2 40		20.06	
5	β	Cassiopeæ		0 1 43		3.088	+ 58 22 39.1	2	20.05	
6		B. A. C. 10	5.8	0 2 12.50	1	3.065	− 28 46		20.05	
7		Weisse O, 10	9.2	0 2 18.58	2	3.072	+ 1 32		20.05	
8		Lacaille 9747	8.2	0 2 51.01	1	3.064	− 26 39		20.05	
9		O. Arg. S. 36	7.5	0 3 27.26	1	3.063	− 22 55		20.05	
10		Weisse O, 44	8.3	0 3 28.76	1	3.072	+ 1 32		20.05	
11		Weisse O, 51	7.7	0 3 54.84	3	3.073	+ 3 21		20.05	
12		O. Arg. S. 47		0 5 1		3.062	− 18 42 58.0	1	20.05	
13		O. Arg. S. 48		0 5 7		3.063	− 15 56 34.9	1	20.05	
14		Weisse O, 88	8.8	0 5 49.51	2	3.073	+ 2 10		20.05	
15		Weisse O, 90	8.8	0 5 54.64	2	3.074	2 37		20.05	
16	γ	Pegasi		0 6 1.77	6	3.081	+ 14 24 19.5	5	20.05	
17		Anonymous	9.0	0 6 4.51	1	3.060	− 17 57		20.05	
18		Anonymous	7.6	0 6 5.86	2	3.060	17 58		20.05	
19		Anonymous	8.3	0 6 6.02	1	3.060	− 18 57		20.05	
20		Harvard Z. 97	9.0	0 6 50.94	2	3.072	+ 0 6		20.05	
21		B. A. C. 42	7.5	0 8 46.20	3	3.075	+ 3 28		20.04	
22		B. A. C. 43	5.6	0 9 3.59	2	3.039	− 32 13		20.04	
23		Lacaille 26	7.0	0 9 28.65	1	3.035	33 32		20.04	
24		B. A. C. 49	6.7	0 9 39.00	1	3.034	33 28		20.04	
25		Lacaille 37	7.5	0 11 37.80	1	3.032	30 44		20.03	
26		O. Arg. S. 117	7.5	0 12 22.56	2	3.048	18 27		20.03	
27		Lalande 344	7.4	0 12 53.92	3	3.035	25 54		20.02	
28		O. Arg. S. 122	6.8	0 12 56.72	2	3.047	− 18 28 38.1	1	20.02	
29	d	Piscium		0 13 23.64	2	3.082	+ 7 24 47.6	1	20.02	
30		Lacaille 49	7.2	0 13 53.04	2	3.024	− 30 27		20.02	2s. less than Lacaille.
31		O. Arg. S. 136	5.2	0 14 40.96	2	3.039	20 50		20.01	
32		B. A. C. 77	6.4	0 16 11.80	2	3.013	31 49		20.01	
33		Lacaille 66	7.3	0 16 20.94	2	3.015	30 37		20.00	
34		Lacaille 78	6.7	0 18 3.48	3	3.007	− 31 28		20.00	4s. less than Lacaille.
35	44	Piscium		0 18 13.61	1	3.074	+ 1 10		19.99	
36	45	Piscium	6.2	0 18 28.95	3	3.085	+ 6 55		19.99	
37		Lacaille 83	6.3	0 18 44.60	3	3.013	− 28 28		19.99	
38		Lacaille 84	6.8	0 18 56.82	2	3.004	− 31 31		19.99	
39		Anonymous	8.0	0 19 1.55	1	3.072	+ 0 20		19.99	
40		Lacaille 90	6.0	0 20 13.59	1	3.014	− 26 20		19.98	
41		Lacaille 92	7.0	0 20 31.25	2	3.005	32 37		19.98	3s. less than Lacaille.
42		O. Arg. S. 202	6.4	0 20 34.09	4	3.026	20 55		19.98	
43		B. A. C. 103	5.0	0 20 58.77	1	2.990	33 47		19.97	
44		Lacaille 98	6.5	0 21 27.28	1	3.000	30 4		19.97	4s. less than Lacaille.
45		Lacaille 100	6.5	0 21 50.02	2	3.011	25 24		19.96	
46	12	Ceti	5.7	0 22 53.66	13	3.056	− 4 44		19.96	
47		B. A. C. 113	6.6	0 22 56.97	1	3.082	+ 4 5		19.96	
48		Weisse O, 375	8.2	0 23 17.69	1	3.090	+ 7 44		19.95	
49		Lacaille 118	6.7	0 25 21.57	4	3.002	− 25 25 12.8	1	19.93	
50		Lacaille 122	7.0	0 26 38.42	2	2.993	− 26 52		19.92	
51		Santini 30	7.6	0 26 42.76	2	3.079	+ 2 33		19.92	
52		Anonymous		0 26 45		2.944	− 39 27 23.7	2	19.92	
53		B. A. C. 135	6.5	0 26 45.28	1	2.981	30 20		19.92	
54		B. A. C. 136	6.5	0 26 51.72	2	2.959	− 35 45		19.92	
55		Weisse O, 453	9.2	0 27 5.32	2	3.094	+ 7 55		19.92	
56		Lacaille 131	7.2	0 27 10.94	2	2.969	− 33 4		19.91	4s. less than Lacaille.
57	13	Ceti	6.0	0 28 2.56	2	3.059	4 21 50.5	2	19.91	
58		Lacaille 138	6.8	0 28 4.65	3	2.989	− 26 54		19.91	
59		(* 127) W.	8.6	0 28 25.88	2	3.079	+ 2 32		19.90	
60		O. Arg. S. 284	7.5	0 28 41.11	1	2.984	− 27 38		+ 19.90	

EPOCH MEAN MIDNIGHT, WASHINGTON.

DATE.	SID. T.	G.	H.		LOG. *g*.		LOG. *h*.	LOG. *i*.		*f*.		*t*.	*p*.	☽	☽—Γ'
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
Mar. 1	10.63	12 7 50	7 21 34	258	1.84787	24	1.2773	0.8865	26	—10.785	6	— 3.165	.0073	122	209
2	10.70	12 7 49	7 17 16	258	1.84811	24	1.2769	0.8891	24	10.791	6	3.167	.0073	135	222
3	10.76	12 7 48	7 12 58	258	1.84835	24	1.2765	0.8915	23	10.797	6	3.170	.0073	147	235
4	10.82	12 7 48	7 8 40	259	1.84859	24	1.2761	0.8938	21	10.803	5	3.172	.0073	160	248
5	10.88	12 7 47	7 4 21	258	1.84883	24	1.2757	0.8959	19	10.808	6	3.175	.0074	173	261
6	10.95	12 7 47	7 0 3	259	1.84907	23	1.2753	0.8978	18	10.814	6	3.178	.0074	186	274
7	11.02	12 7 46	6 55 44	259	1.84930	23	1.2751	0.8996	16	10.820	5	3.181	.0074	199	287
8	11.09	12 7 46	6 51 25	259	1.84953	23	1.2748	0.9012	15	10.825	6	3.183	.0074	213	300
9	11.16	12 7 46	6 47 6	259	1.84976	23	1.2745	0.9027	14	10.831	6	3.186	.0074	227	313
10	11.23	12 7 46	6 42 47	259	1.84999	23	1.2743	0.9041	13	10.837	6	3.189	.0074	241	326
11	11.29	12 7 46	6 38 28	260	1.85022	23	1.2741	0.9054	11	10.843	6	3.192	.0074	254	339
12	11.36	12 7 46	6 34 8	260	1.85045	22	1.2739	0.9065	9	10.849	5	3.195	.0074	268	352
13	11.42	12 7 47	6 29 48	260	1.85067	22	1.2737	0.9074	8	10.854	6	3.197	.0075	282	5
14	11.48	12 7 47	6 25 28	260	1.85089	22	1.2735	0.9082	7	10.860	5	3.200	.0075	297	19
15	11.55	12 7 48	6 21 8	260	1.85111	22	1.2734	0.9089	6	10.865	6	3.202	.0075	311	32
16	11.61	12 7 48	6 16 48	260	1.85133	21	1.2733	0.9095	5	10.871	5	3.205	.0075	325	45
17	11.68	12 7 49	6 12 28	260	1.85154	22	1.2732	0.9100	3	10.876	6	3.208	.0075	340	58
18	11.74	12 7 50	6 8 8	259	1.85176	21	1.2732	0.9103	2	10.882	5	3.211	.0075	354	71
19	11.81	12 7 51	6 3 49	259	1.85197	22	1.2731	0.9105	1	10.887	5	3.214	.0075	7	84
20	11.87	12 7 52	5 59 30	259	1.85219	22	1.2731	0.9106	1	10.892	6	3.216	.0076	21	97
21	11.94	12 7 53	5 55 11	259	1.85241	22	1.2732	0.9105	2	10.898	5	3.219	.0076	34	110
22	12.01	12 7 55	5 50 52	259	1.85263	22	1.2732	0.9103	3	10.903	6	3.222	.0076	47	123
23	12.07	12 7 57	5 46 33	259	1.85285	21	1.2733	0.9100	5	10.909	6	3.225	.0076	58	136
24	12.14	12 7 59	5 42 14	258	1.85306	21	1.2734	0.9095	6	10.915	5	3.227	.0076	71	149
25	12.21	12 8 1	5 37 56	258	1.85327	22	1.2735	0.9089	7	10.920	6	3.230	.0076	83	162
26	12.27	12 8 3	5 33 38	258	1.85349	22	1.2736	0.9082	9	10.926	5	3.233	.0076	95	175
27	12.34	12 8 5	5 29 20	257	1.85371	22	1.2737	0.9073	10	10.931	6	3.236	.0077	107	188
28	12.40	12 8 7	5 25 3	257	1.85393	24	1.2739	0.9063	11	10.937	5	3.238	.0077	118	202
29	12.47	12 8 9	5 20 46	257	1.85417	23	1.2741	0.9052	12	10.942	5	3.241	.0077	131	215
30	12.54	12 8 11	5 16 29	257	1.85440	22	1.2743	0.9040	14	10.947	6	3.243	.0077	143	228
31	12.60	12 8 14	5 12 12	256	1.85462	23	1.2746	0.9026	16	10.953	5	3.246	.0077	155	241
Apr. 1	12.67	12 8 17	5 7 56	256	1.85485	23	1.2749	0.9010	16	10.958	6	3.249	.0077	168	254
2	12.73	12 8 20	5 3 40	255	1.85508	23	1.2752	0.8994	18	10.964	6	3.251	.0077	182	267
3	12.80	12 8 23	4 59 25	254	1.85531	23	1.2755	0.8976	20	10.970	5	3.254	.0078	195	280
4	12.87	12 8 26	4 55 11	254	1.85554	23	1.2758	0.8956	20	10.975	6	3.257	.0078	209	293
5	12.93	12 8 29	4 50 57	253	1.85577	23	1.2761	0.8936	22	10.981	6	3.260	.0078	223	306
6	13.00	12 8 32	4 46 44	253	1.85600	24	1.2765	0.8914	23	10.987	6	3.263	.0078	237	319
7	13.07	12 8 35	4 42 31	253	1.85624	24	1.2769	0.8891	25	10.993	6	3.265	.0078	251	332
8	13.13	12 8 38	4 38 18	252	1.85648	24	1.2773	0.8866	26	10.999	6	3.268	.0078	266	345
9	13.20	12 8 42	4 34 6	253	1.85672	24	1.2777	0.8840	28	11.005	6	3.271	.0078	280	358
10	13.26	12 8 46	4 29 55	251	1.85696	24	1.2782	0.8812	29	11.011	6	3.274	.0078	293	11
11	13.33	12 8 50	4 25 44	250	1.85720	25	1.2787	0.8783	30	11.017	6	3.277	.0078	308	24
12	13.39	12 8 53	4 21 34	249	1.85745	25	1.2792	0.8753	32	11.023	6	3.279	.0079	322	37
13	13.45	12 8 57	4 17 25	248	1.85790	26	1.2797	0.8721	34	11.029	7	3.282	.0079	336	50
14	13.52	12 9 1	4 13 17	247	1.85816	25	1.2802	0.8687	35	11.036	6	3.285	.0079	349	64
15	13.58	12 9 5	4 9 10	246	1.85841	25	1.2807	0.8652	36	11.042	7	3.287	.0079	3	77
16	13.65	12 9 9	4 5 4	245	1.85846	26	1.2812	0.8616	38	11.049	6	3.290	.0079	16	90
17	13.72	12 9 13	4 0 59	245	1.85872	26	1.2817	0.8578	39	11.055	7	3.293	.0079	29	103
18	13.79	12 9 17	3 56 54	244	1.85898	27	1.2823	0.8539	41	11.062	6	3.295	.0079	42	116
19	13.85	12 9 21	3 52 50	243	1.85925	27	1.2829	0.8498	43	11.068	7	3.298	.0079	54	129
20	13.92	12 9 25	3 48 47	243	1.85952	28	1.2835	0.8455	45	11.075	7	3.301	.0079	67	142
21	13.98	12 9 30	3 44 44	241	1.85980	27	1.2841	0.8410	46	11.082	7	3.304	.0080	79	155
22	14.05	12 9 34	3 40 43	241	1.86007	28	1.2847	0.8364	48	11.089	7	3.307	.0080	91	168
23	14.11	12 9 39	3 36 42	241	1.86035	28	1.2853	0.8316	50	11.096	7	3.309	.0080	102	181
24	14.18	12 9 43	3 32 41	241	1.86063	28	1.2859	0.8266	52	11.103	7	3.312	.0080	114	194
25	14.24	12 9 47	3 28 40	240	1.86091	29	1.2865	0.8214	53	11.110	7	3.315	.0080	126	207
26	14.31	12 9 52	3 24 40	239	1.86120	29	1.2871	0.8161	54	11.117	7	3.318	.0080	138	220
27	14.37	12 9 56	3 20 41	238	1.86149	29	1.2877	0.8107	56	11.124	7	3.321	.0080	151	234
28	14.44	12 10 1	3 16 43	236	1.86178	30	1.2883	0.8051	59	11.131	8	3.324	.0081	164	247
29	14.51	12 10 6	3 12 47	234	1.86208	30	1.2889	0.7992	62	11.139	7	3.326	.0081	177	260
30	14.57	12 10 10	3 8 53		1.86238		1.2895	0.7930		—11.146		— 3.329	.0081	190	273

EPOCH MEAN MIDNIGHT, WASHINGTON.

DATE.	SID. T.	G.	H.		LOG. *g*.		LOG. *h*.	LOG. *i*.		*f*.		*t*.	*p*.	☽	☽—Γ¹.
1863.	h.	h. m. s.	h. m. s.							s.		y.		°	°
May 1	14.64	12 10 15	3 5 0	233	1.86268	30	1.2902	0.7864	66	—11.154	8	— 3.332	.0081	204	286
2	14.71	12 10 20	3 1 7	232	1.86298	31	1.2909	0.7798	68	11.162	8	3.335	.0081	218	299
3	14.77	12 10 25	2 57 15	232	1.86329	31	1.2916	0.7730	70	11.170	8	3.338	.0081	232	312
4	14.84	12 10 30	2 53 23	234	1.86360	32	1.2922	0.7660	73	11.178	8	3.340	.0081	246	325
5	14.91	12 10 34	2 49 31	231	1.86392	33	1.2928	0.7587	74	11.186	8	3.343	.0082	261	338
6	14.97	12 10 38	2 45 40	230	1.86425	32	1.2934	0.7513	78	11.194	8	3.345	.0082	275	351
7	15.04	12 10 43	2 41 50	230	1.86457	32	1.2941	0.7435	81	11.202	8	3.348	.0082	290	4
8	15.10	12 10 47	2 38 0	229	1.86489	33	1.2947	0.7354	83	11.210	8	3.350	.0082	305	17
9	15.17	12 10 52	2 34 11	228	1.86522	33	1.2953	0.7271	85	11.218	8	3.353	.0082	319	30
10	15.23	12 10 56	2 30 23	227	1.86555	33	1.2959	0.7186	88	11.226	9	3.356	.0082	333	43
11	15.30	12 11 0	2 26 36	226	1.86588	34	1.2965	0.7098	92	11.235	8	3.359	.0082	346	56
12	15.37	12 11 5	2 22 50	225	1.86622	34	1.2971	0.7006	95	11.243	8	3.362	.0082	359	70
13	15.43	12 11 9	2 19 5	225	1.86656	34	1.2977	0.6911	99	11.251	9	3.364	.0083	13	83
14	15.50	12 11 13	2 15 20	224	1.86690	34	1.2983	0.6812	102	11.260	9	3.367	.0083	26	96
15	15.56	12 11 17	2 11 36	224	1.86724	35	1.2989	0.6710	104	11.269	9	3.370	.0083	38	109
16	15.63	12 11 21	2 7 52	223	1.86759	34	1.2994	0.6606	111	11.278	9	3.373	.0083	51	122
17	15.69	12 11 25	2 4 9	222	1.86793	33	1.3000	0.6495	113	11.287	9	3.375	.0083	63	135
18	15.76	12 11 29	2 0 27	221	1.86826	34	1.3005	0.6382	118	11.296	9	3.378	.0083	75	148
19	15.82	12 11 33	1 56 46	222	1.86860	34	1.3010	0.6264	122	11.305	9	3.381	.0083	87	161
20	15.89	12 11 37	1 53 4	220	1.86894	34	1.3015	0.6142	125	11.314	10	3.383	.0083	99	174
21	15.95	12 11 41	1 49 24	219	1.86938	36	1.3020	0.6017	132	11.324	9	3.386	.0084	111	187
22	16.02	12 11 45	1 45 45	219	1.86974	36	1.3025	0.5885	137	11.333	10	3.389	.0084	123	200
23	16.08	12 11 48	1 42 6	218	1.87060	37	1.3030	0.5748	142	11.343	9	3.391	.0084	135	213
24	16.15	12 11 52	1 38 28	218	1.87047	37	1.3035	0.5606	148	11.352	9	3.394	.0084	147	226
25	16.21	12 11 56	1 34 50	218	1.87084	37	1.3040	0.5458	157	11.361	10	3.397	.0084	159	239
26	16.28	12 11 59	1 31 12	217	1.87121	37	1.3044	0.5301	164	11.371	9	3.400	.0084	172	252
27	16.35	12 12 3	1 27 35	216	1.87158	37	1.3049	0.5137	171	11.380	10	3.403	.0084	185	266
28	16.41	12 12 6	1 23 59	216	1.87195	38	1.3053	0.4966	179	11.390	10	3.405	.0084	198	279
29	16.48	12 12 10	1 20 23	216	1.87233	38	1.3058	0.4787	187	11.400	10	3.408	.0085	211	292
30	16.54	12 12 13	1 16 47	215	1.87271	39	1.3062	0.4600	192	11.410	10	3.411	.0085	226	205
31	16.61	12 12 16	1 13 12	215	1.87310	38	1.3066	0.4408	207	11.420	11	3.414	.0085	240	318
une 1	16.67	12 12 19	1 9 37	214	1.87348	39	1.3070	0.4201	218	11.431	10	3.416	.0085	255	331
2	16.74	12 12 22	1 6 3	213	1.87387	38	1.3074	0.3983	230	11.441	10	3.419	.0085	270	344
3	16.80	12 12 25	1 2 30	213	1.87425	39	1.3077	0.3753	245	11.451	9	3.421	.0085	285	357
4	16.87	12 12 27	0 58 57	213	1.87464	39	1.3080	0.3508	263	11.460	10	3.424	.0085	300	10
5	16.94	12 12 29	0 55 24	213	1.87503	39	1.3083	0.3245	281	11.470	10	3.427	.0086	315	13
6	17.00	12 12 32	0 51 51	212	1.87542	39	1.3086	0.2964	299	11.480	10	3.430	.0086	329	36
7	17.07	12 12 34	0 48 19	212	1.87581	39	1.3089	0.2665	322	11.490	11	3.432	.0086	343	49
8	17.13	12 12 36	0 44 47	212	1.87620	39	1.3091	0.2343	351	11.501	10	3.435	.0086	356	62
9	17.20	12 12 38	0 41 15	211	1.87659	39	1.3093	0.1992	381	11.511	10	3.438	.0086	9	75
10	17.27	12 12 40	0 37 44	212	1.87698	39	1.3095	0.1611	422	11.521	11	3.441	.0086	22	88
11	17.33	12 12 42	0 34 12	211	1.87737	39	1.3097	0.1189	470	11.532	10	3.444	.0086	35	102
12	17.40	12 12 44	0 30 41	211	1.87776	40	1.3099	0.0719	524	11.542	10	3.446	.0087	47	115
13	17.47	12 12 46	0 27 10	211	1.87816	39	1.3101	0.0195	600	11.552	11	3.449	.0087	59	128
14	17.53	12 12 47	0 23 39	211	1.87855	39	1.3102	9.9595	690	11.563	10	3.452	.0087	71	141
15	17.60	12 12 48	0 20 8	211	1.87894	39	1.3103	9.8905	830	11.573	10	3.455	.0087	83	154
16	17.67	12 12 50	0 16 37	211	1.87933	39	1.3104	9.8075	1025	11.583	11	3.457	.0087	95	167
17	17.73	12 12 51	0 13 6	210	1.87972	40	1.3105	9.7050	1345	11.594	11	3.460	.0087	107	180
18	17.80	12 12 52	0 9 36	210	1.88012	39	1.3106	9.5705	1976	11.605	10	3.463	.0088	119	193
19	17.87	12 12 53	0 6 6	210	1.88051	39	1.3106	9.3729	3718	11.615	10	3.465	.0088	131	206
20	17.93	12 12 54	0 2 36	211	1.88090	39	1.3106	9.0011		11.625	11	3.468	.0088	143	269
21	18.00	12 12 55	23 59 5	210	1.88129	40	1.3106	n 8.5441		11.636	10	3.471	.0088	155	232
22	18.07	12 12 56	23 55 35	211	1.88169	39	1.3106	9.2304	2539	11.646	11	3.474	.0088	157	245
23	18.13	12 12 57	23 52 4	210	1.88208	39	1.3105	9.4843	1601	11.657	10	3.476	.0088	180	258
24	18.20	12 12 57	23 48 34	210	1.88247	39	1.3105	9.6444	1163	11.667	11	3.479	.0088	193	271
25	18.26	12 12 57	23 45 4	211	1.88286	39	1.3104	9.7609	916	11.678	10	3.482	.0088	206	284
26	18.33	12 12 57	23 41 33	210	1.88325	39	1.3103	9.8525	754	11.688	11	3.485	.0089	220	298
27	18.39	12 12 58	23 38 3	211	1.88364	38	1.3102	9.9279	642	11.699	11	3.487	.0089	234	311
28	18.46	12 12 57	23 34 32	210	1.88402	39	1.3101	9.9921	556	11.710	10	3.490	.0089	249	324
29	18.52	12 12 57	23 31 2	210	1.88441	38	1.3100	0.0477	489	11.720	10	3.493	.0089	264	337
30	18.58	12 12 57	23 27 32		1.88479		1.3098	n 0.0966		—11.730		— 3.496	.0089	279	350

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				h. m. s.		s.	° ′ ″		s.	
191	ο	Piscium	4.2	1 38 0.26	7	+ 3.154	+ 8 27 6.9	2	+ 18.25	
192		Lacaille 509	7.3	1 38 32.18	1	2.757	− 29 26		18.23	3s. less than Lacaille.
193		O. Arg. S. 1049	8.5	1 38 44.42	1	2.786	27 4		18.22	
194		Anonymous	7.3	1 39 2.81	1	2.786	27 4		18.21	
195		O. Arg. S. 1052	7.6	1 39 3.54	3	2.785	27 6		18.21	
196	ε	Sculptoris	6.2	1 39 5.31	2	2.802	25 45		18.21	
197		O. Arg. S. 1056	8.4	1 39 14.79	1	2.786	27 1		18.20	
198		Lacaille 513	7.6	1 39 32.42	1	2.772	− 28 3		18.19	
199		Anonymous		1 39 36.		2.650	− 36 48 41.0	1	18.19	
200		Weisse I, 721	8.9	1 40 21.14	3	3.215	+ 13 54		18.16	
201		O. Arg. S. 1066	7.7	1 40 31.94	1	2.885	− 18 11		18.16	
202		Santini 102	7.2	1 41 19.54	1	3.142	+ 6 59		18.13	
203		Lacaille 527	7.0	1 42 7.55	2	2.779	− 26 57		18.10	
204		Lalande 3344	8.7	1 42 34.30	3	3.212	+ 13 39		18.08	
205		Weisse I, 755	9.0	1 42 49.33	1	3.075	0 16		18.07	
206		Weisse I, 767		1 43 26.62	2	3.178	+ 10 21		18.05	
207		Weisse I, 773	8.2	1 43 30.89	2	3.044	− 2 46		18.04	
208		Lacaille 535	7.2	1 43 34.50	4	2.738	− 29 44		18.04	
209	ε	Cassiopeæ		1 44 21		4.225	+ 62 58 43.4	2	18.01	
210		O. Arg. S. 1127		1 45 1		2.899	− 16 20 29.4	2	17.99	
211		Weisse I, 800	9.0	1 45 27.38	1	3.044	− 2 43		17.97	
212		Weisse I, 807	8.3	1 45 31.55	1	3.222	+ 14 11		17.97	
213	γ^1	Arietis	4.5	1 45 51.21	2	3.273	18 36		17.95	
214	γ^2	Arietis	4.5	1 45 51.19	1	3.273	18 36		17.95	
215	ξ	Piscium		1 46 18.61	1	3.098	2 30		17.94	
216	β	Arietis	3.2	1 46 54.76	19	3.292	20 7 19.6	5	17.91	
217		Weisse I, 860	9.0	1 48 21.15	1	3.103	+ 2 53		17.86	
218		Lacaille 566	7.8	1 49 29.11	2	2.720	− 29 48		17.81	3s. less than Lacaille.
219	ι	Arietis		1 49 42.46	2	3.262	+ 17 8		17.80	
220		O. Arg. S. 1179	7.8	1 49 48.82	2	2.779	− 25 58		17.80	
221	56	Ceti	6.0	1 50 6.84	1	2.814	− 23 13		17.79	
222	48	Cassiopeæ		1 50 31.41	1	4.797	+ 70 14		17.77	
223		Lacaille 570	7.6	1 50 32.89	3	2.771	− 26 23		17.77	10s. greater than Lacaille.
224		O. Arg. S. 1189		1 50 39		2.873	− 18 21 41.9	1	17.76	
225	50	Cassiopeæ	4.0	1 51 33.26	2	4.967	+ 71 44 28.7	3	17.73	
226		Lacaille 586 (1st star)	7.3	1 52 27.98	3	2.797	− 23 36		17.69	
227		Lacaille 586 (2d star)	7.1	1 52 28.42	3	2.797	23 36		17.69	
228		O Arg. S. 1219	9.5	1 52 54.73	1	2.796	− 24 7		17.67	
229		Weisse I, 943	8.5	1 53 17.73	1	3.215	+ 12 42		17.66	
230		Lacaille 598	6.8	1 54 14.22	2	2.773	− 25 5		17.62	
231		Weisse I, 963	9.0	1 54 22.96	1	3.110	+ 3 22		17.61	
232	α	Piscium		1 54 49		3.095	+ 2 5 11.7		17.59	
233		O. Arg. S. 1245		1 55 8		2.754	− 26 18 37.7		17.58	
234		Lacaille 607	6.5	1 56 3.25	1	2.802	22 38		17.54	
235		O. Arg. S. 1256	7.5	1 56 12.57	2	2.735	− 27 25		17.53	
236		B A. C. 641	7.0	1 57 28.24	1	3.153	+ 7 4		17.48	
237		B. A. C. 643	4.8	1 58 12.80	3	2.691	− 29 58		17.45	
238		Weisse I, 1043	8.3	1 59 7.12	1	3.236	+ 13 55		17.41	
239	α	Arietis	2.2	1 59 17.27	16	3.351	22 47 55.2	2	17.40	
240		Weisse I, 1047	9.2	1 59 20.24	1	3.238	13 59		17.40	
241		Weisse I, 1050	9.0	1 59 20.68	1	3.238	13 55		17.40	
242		Weisse I, 1071	8.0	2 0 12.71	1	3.168	8 11		17.36	
243		Weisse I, 1080	7.7	2 0 54.53	1	3.169	+ 8 11		17.33	
244		Lacaille 638	7.0	2 1 49.24	2	2.708	− 28 14		17.29	
245		Anonymous	9.0	2 2 1.20	1	3.953	+ 52 24		17.28	
246		Anonymous	9.0	2 2 20		2.845	− 18 26 37.6		17.27	
247		Lacaille 639	7.4	2 2 36.50	6	2.773	− 23 39		17.25	
248	15	Arietis		2 2 52.25	1	3.305	+ 18 51		17.24	
249		Lacaille 644	6.7	2 3 9.92	2	2.752	− 25 1		17.23	
250		Lalande 4015	7.3	2 4 12.23	1	3.968	+ 52 24		17.18	Groombridge 466.
251		Weisse II, 38	8.7	2 4 20.64	1	3.180	8 55		17.18	
252		Anonymous	8.5	2 4 29.15	1	3.172	8 14		17.17	
253		Weisse II, 44	8.0	2 4 34.83	1	3.172	+ 8 14		17.17	
254		O. Arg. S. 1376	6.7	2 4 55.16	1	2.841	− 18 24 13.0		17.15	
255		Lalande 4070		2 5 7.95	1	+ 3.313	+ 19 10		+ 17.14	

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256	19	Arietis	7.0	2 5 25.42	1	+ 3.253	+ 14 37		+ 17.13	
257		O. Arg. S. 1384 . . .	7.5	2 5 26.23	1	2.841	− 18 23		17.13	
258	ξ^1	Ceti	4.6	2 5 35.01	11	3.172	+ 8 11 17.2	2	17.12	
259		O. Arg. S. 1388 . . .	9.0	2 5 47.90	1	2.675	− 29 37		17.11	
260		O. Arg. S. 1404 . . .	9.5	2 7 10.97	1	2.671	− 29 38		17.05	
261		Weisse II, 109	8.4	2 8 17.58	2	3.264	+ 15 10		16.97	
262		Lacaille 678	7.4	2 8 36.58	2	2.752	− 24 11		16.98	
263		O. Arg. S. 1424 . . .	8.2	2 8 49.84	1	2.756	23 56		16.97	
264		O. Arg. S. 1433 . . .	7.4	2 9 19.76	1	2.705	27 10		16.95	
265	67	Ceti		2 10 0.11	4	2.983	− 7 4		16.91	
266	θ	Arietis		2 10 20.71	1	3.323	+ 19 15		16.90	
267		Weisse II, 168	8.0	2 11 29.85	1	3.002	− 5 31		16.89	
268		Anonymous	9.0	2 11 31.09	1	3.001	5 35		16.89	
269		Weisse II, 185	9.0	2 12 38.30	1	3.000	5 39		16.79	
270		B. A. C. 722	7.0	2 12 38.76	2	3.008	5 0		16.79	
271		B. A. C. 723	6.4	2 12 42.08	3	2.706	− 26 36		16.79	
272		Anonymous	9.0	2 13 1.72	1	3.240	+ 12 54		16.77	
273		Lacaille 699	8.0	2 13 30.39	2	2.738	− 24 23		16.75	17s. less than Lacaille.
274		Lalande 4410	6.2	2 15 29.32	2	2.825	18 18 1.4	1	16.65	
275		Lacaille 711	6.3	2 15 49.52	1	2.667	28 29		16.63	
276		Weisse II, 250 . . .	7.2	2 16 24.51	3	2.982	6 50		16.61	
277		B. A. C. 743	6.6	2 17 8.51	3	2.678	− 27 38		16.57	
278	ι	Cassiopeæ		2 17 35.00	2	4.832	+ 66 46 12.4	5	16.55	
279		Lacaille 727	7.0	2 18 58.50	3	2.758	− 22 25		16.48	4s. less than Lacaille.
280		B. Z. 27, 25	8.5	2 19 3.13	1	3.384	+ 22 15		16.48	
281		B. Z. 27, 26	9.5	2 19 16.35	1	3.384	22 16		16.47	
282	ξ^2	Ceti		2 20 43.22	4	3.178	+ 7 50		16.39	
283		Lacaille 744	7.8	2 22 1.08	2	2.675	− 27 5		16.33	
284		Lacaille 745		2 22 9		2.539	34 26 23.6	1	16.32	
285		Lacaille 750	7.0	2 22 40.68	2	2.728	− 23 50		16.29	
286		Weisse II, 373	9.0	2 22 56.25	1	3.261	+ 13 38		16.28	
287	27	Arietis	5.8	2 23 8.84	1	3.112	+ 17 5		16.27	
288		Lacaille 756	7.0	2 23 10.96	2	2.712	− 24 44		16.27	
289		Weisse II, 386	9.0	2 23 23.48	1	2.976	6 57		16.26	
290		B. A. C. 775	6.7	2 24 9.80	1	2.735	23 10		16.22	
291	σ	Ceti		2 25 28		2.847	15 51 40.0	1	16.25	
292		Lacaille 771	7.2	2 25 38.78	2	2.724	23 42		16.14	
293		Lacaille 772	7.1	2 26 18.30	3	2.655	27 38		16.11	
294		Weisse II, 437	8.0	2 26 55.14	2	2.979	6 37		16.07	
295		B. A. C. 790, (1st star) .	9.0	2 27 42.03	1	2.629	28 51		16.03	
296		B. A. C. 790, (2d star) .	7.4	2 27 42.78	1	2.629	28 51		16.03	
297		O. Arg. S. 1655 . . .	7.3	2 28 30.22	2	2.811	− 17 54		15.99	
298		Weisse II, 470	8.5	2 28 31.14	1	3.282	+ 14 32		15.99	
299	30	Arietis	6.3	2 28 53.68	1	3.433	24 2		15.97	
300		B. A. C. 797	6.0	2 28 56.50	1	3.433	24 2		15.97	
301	31	Arietis		2 29 0.18	1	3.242	11 50		15.96	
302		Anonymous	9.2	2 29 3.43	1	3.283	+ 14 37		15.96	
303		Lacaille 792	7.3	2 29 4.79	1	2.617	− 29 19		15.96	
304		O. Arg. S. 1664 . . .	8.8	2 29 32.76	2	2.652	− 27 19		15.93	
305		B. Z. 333, 48	8.5	2 29 52.34	1	3.462	+ 25 36		15.92	
306		Lacaille 796	7.0	2 30 11.02	2	2.700	− 24 31		15.90	
307		B. Z. 333, 49	9.0	2 30 28.53	1	3.464	+ 25 38		15.89	
308		Lacaille 802	7.4	2 30 59.73	1	2.596	− 29 36		15.86	
309		Lacaille 803	7.1	2 31 24.54	3	2.714	23 35		15.84	
310		Anonymous		2 32 5	1	2.510	34 17 8.4		15.80	
311		Lacaille 813	6.8	2 32 41.91	2	2.662	26 23		15.77	
312		Lacaille 814	7.1	2 32 57.78	4	2.624	28 25		15.75	
313		Weisse II, 566	9.0	2 33 8.78	1	2.981	6 17		15.74	
314		Weisse II, 576	8.0	2 33 35.24	1	2.990	5 38		15.72	
315		Weisse II, 574	8.8	2 33 35.25	1	3.009	4 19		15.72	
316		O. Arg. S. 1744 . . .	8.0	2 34 40.66	1	2.794	− 18 25		15.66	
317	γ	Ceti		2 36 2.95	11	3.111	+ 2 39		15.58	
318		Lacaille 838	6.7	2 36 45.52	1	2.609	− 28 45		15.54	
319		Weisse II, 640	8.6	2 37 21.69	3	2.996	5 7		15.51	
320		B. A. C. 854		2 38 1.21	1	+ 2.656	− 26 2		+ 15.47	

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			h. m. s.		s.	° ′ ″		″	
321	Lacaille 865	7.1	2 39 56.37	2	+ 2.655	− 25 54		+ 15.37	
322	η Persei		2 40 30		4.317	+ 55 18 40.8	5	15.33	
323	Lacaille 873	6.5	2 40 52.81	2	2.704	− 23 3		15.31	4s. less than Lacaille.
324	π Arietis	5.8	2 41 29.03	3	3.335	+ 16 52 47.6	4	15.28	
325	B. Z. 530, 60	7.5	2 42 5.11	1	3.472	+ 24 45		15.25	
326	O. Arg. S. 1834	7.6	2 42 43.23	1	2.662	− 25 12		15.21	
327	B. Z. 337, 8	8.5	2 42 49.01	1	3.308	+ 15 9		15.20	
328	O. Arg. S. 1838	8.0	2 43 11.72	2	2.790	− 17 52		15.18	
329	B. A. C. 883	5.5	2 43 50.30	3	2.596	28 31		15.15	
330	Lalande 5315		2 44 33.13	1	2.687	23 36		15.10	
331	B. A. C. 894	6.2	2 46 0.54	1	2.531	31 24		15.02	
332	Lalande 5358	7.3	2 46 29.15	1	3.037	2 13		14.99	
333	Anonymous	7.6	2 46 33.43	1	2.686	23 39		14.99	
334	Lacaille 908	6.4	2 47 0.15	3	2.700	22 39		14.96	
335	Lacaille 910	6.0	2 47 17.14	2	2.695	− 22 56		14.95	
336	Anonymous	8.5	2 47 19.95	1	3.498	+ 25 32		14.94	
337	B. Z. 333, 72	8.0	2 47 52.78	1	3.499	25 31		14.91	
338	ρ^3 Arietis	5.8	2 48 32.25	2	3.354	+ 17 27 45.6	1	14.87	
339	Lacaille 918	6.8	2 48 43.67	2	2.523	− 31 28		14.86	
340	Lacaille 922	6.6	2 49 20.16	2	2.635	− 25 52		14.83	
341	Rumker 755	8.2	2 50 28.72	2	3.322	+ 15 26		14.76	
342	Lacaille 932, (1st star)	7.6	2 51 3.56	2	2.638	− 25 32		14.73	
343	Lacaille 932, (2d star)	7.1	2 51 4.94	3	2.638	25 32		14.72	
344	Lacaille 933	6.8	2 51 10.20	1	2.659	− 24 25		14.72	
345	ε Arietis		2 51 12.70	5	3.417	+ 20 46 41.9:	1	14.71	
346	O. Arg. S. 1930		2 51 29		2.804	− 16 24 26.4	1	14.70	
347	λ Ceti	6.0	2 52 12.82	1	3.206	+ 8 21		14.66	
348	B. A. C. 940	5.5	2 53 26.38	2	2.627	− 25 50		14.58	
349	B. Z. 337, 20	8.2	2 54 0.45	2	3.335	+ 15 58		14.55	
350	Lacaille 959	7.2	2 54 43.07	2	2.577	− 28 11		14.50	
351	α Ceti	2.3	2 54 57.89	14	3.129	+ 3 32		14.49	
352	B. A. C. 951	6.2	2 55 35.62	1	2.566	− 28 38		14.45	
353	τ^3 Eridani	4.2	2 56 13.22	1	2.654	24 11		14.41	
354	O. Arg. S. 2000	8.5	2 57 32.45	1	2.763	18 17		14.33	
355	Anonymous	9.0	2 58 0.62	1	2.661	− 23 40		14.30	
356	β Persei	3.0	2 59 4.33	1	3.874	+ 40 25		14.24	
357	53 Arietis		2 59 33.03	1	3.366	17 20		14.21	
358	κ Persei	5.0	3 0 4.15	3	3.995	+ 44 19		14.18	
359	Lacaille 981		3 0 48.00	1	2.512	− 30 33		14.13	3s. less than Lacaille.
360	B. A. C. 978	6.8	3 1 51.92	1	2.557	28 22		14.06	
361	Lacaille 983	7.5	3 2 28.75	1	2.454	− 32 54		14.03	
362	48 Cephei S. P.		3 2 42		7.287	+ 77 12 50.4	1	14.01	
363	Weisse III, 26	6.5	3 3 15.20	1	3.232	9 28		13.98	
364	δ Arietis		3 3 37.74	14	3.406	+ 19 11 41.4	1	13.95	
365	Lacaille 996	7.1	3 4 25.35	1	2.637	− 24 16		13.90	
366	Weisse III, 95	8.0	3 6 12.06	1	3.125	+ 3 7		13.79	
367	Lacaille 1004	6.9	3 6 47.92	2	2.442	− 32 55		13.75	
368	ζ Arietis	4.6	3 6 51.54	5	3.437	+ 20 31 33.3	1	13.75	
369	Lacaille 1010	6.5	3 7 23.21	1	2.551	− 28 6		13.72	
370	B. A. C. 1012	7.0	3 8 58.93	1	2.580	− 26 37		13.62	
371	B. Z. 506, 55	7.8	3 10 25.14	1	3.386	+ 17 40		13.52	
372	B. A. C. 1019		3 10 25.20	2	2.470	− 31 21		13.52	
373	ι Persei		3 12 4.62	2	3.993	+ 42 49		13.41	
374	15 Eridani	6.0	3 12 10.68	1	2.649	− 23 2		13.41	
375	τ Arietis	5.5	3 13 8.94	2	3.448	+ 20 38		13.35	
376	Weisse III, 233	8.5	3 13 42.28	1	3.250	10 7		13.31	
377	α Persei		3 14 20.66	5	4.240	+ 49 21 33.7	2	13.27	
378	B. A. C. 1047	7.2	3 14 46.37	1	2.557	− 27 7		13.24	
379	B. A. C. 1049	6.0	3 15 17.13	2	2.621	− 24 8		13.21	
380	Anonymous	9.0	3 15 26.89	1	3.540	+ 24 55		13.19	
381	o Tauri		3 17 16.89	1	3.224	+ 8 32		13.07	
382	Lacaille 1079		3 17 46.18	1	2.522	− 28 25		13.04	
383	O. Arg. S. 2245	6.5	3 17 53.56	2	2.673	− 21 26		13.03	
384	B. Z. 448, 25	8.2	3 18 23.31	1	3.854	+ 37 33		13.00	
385	Weisse III, 334	7.0	3 19 36.22	2	+ 3.294	+ 12 15		+ 12.92	

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386	B. A. C. 1073	6.0	3 20 27.95	2	+ 2.531	— 27 49		+ 12.86	
387	Lacaille 1102		3 20 53.54	1	2.502	— 29 1		12.83	
388	B. A. C. 1061		3 21 0.31	1	18.546	+ 86 12		12.82	
389	Groombridge 698	7.3	3 22 44.36	3	4.012	+ 42 16		12.71	
390	Lacaille 1113	6.6	3 23 28.52	1	2.611	— 23 57		12.66	
391	Lacaille 1114	7.0	3 23 36.45	1	2.632	— 22 57		12.65	6.5s. greater than Lacaille.
392	Anonymous	9.5	3 23 44.32	1	3.201	+ 7 6		12.64	
393	Weisse III, 428	7.7	3 24 35.02	1	3.201	+ 7 5		12.58	
394	Lacaille 1127		3 25 53.14	1	2.366	— 34 1		12.49	2.3s. less than Lacaille.
395	ε Eridani	4.1	3 26 20.16	9	2.889	— 9 56 2.3	2	12.46	
396	9 Tauri		3 28 44.38	2	3.515	+ 22 45		12.30	
397	Lacaille 1137	6.6	3 28 53.96	2	2.555	— 26 2		12.29	
398	B. Z. 506, 79	7.5	3 30 8.33	1	3.435	+ 18 54		12.20	
399	11 Tauri		3 32 24.95	3	3.568	+ 24 52		12.04	
400	Lacaille 1160	8.0	3 32 32.41	1	2.410	— 31 45		12.03	
401	B. A. C. 1130	6.5	3 32 58.26	1	2.493	— 28 24		12.00	
402	δ Persei		3 32 58.29	1	4.234	+ 47 20		12.00	
403	Radcliffe 1041	6.5	3 34 4.70	1	4.269	+ 48 4		11.93	
404	Lacaille 1186		3 35 58.14	1	2.565	— 25 6		11.79	
405	O. Arg. S. 2468	8.5	3 36 1.72	1	2.597	— 23 42		11.79	
406	16 Tauri		3 36 29.22	1	3.551	+ 23 51		11.75	
407	17 Tauri		3 36 34.00	4	3.547	23 40		11.75	
408	1 Pleiadum		3 37 7.71	1	3.546	23 36		11.71	
409	7 Pleiadum		3 37 33.03	1	3.546	23 36		11.68	
410	Weisse III, 845		3 37 54.65	2	3.551	23 45		11.65	
411	9 Pleiadum		3 37 56.94	2	3.551	23 45		11.65	
412	23 Tauri		3 38 1		3.546	+ 23 30 29.4	1	11.65	
413	10 Pleiadum		3 38 7.97	1	3.553	+ 23 49		11.64	
414	Lacaille 1199	7.2	3 38 12.26	1	2.467	— 29 3		11.63	
415	B. A. C. 1163		3 38 39.17	1	3.560	24 5		11.60	
416	15 Pleiadum		3 38 57.40	1	3.551	23 41		11.58	
417	18 Pleiadum		3 39 0.25	1	3.551	23 42		11.57	
418	24 Tauri		3 39 2.00	5	3.551	23 41		11.57	
419	η Tauri	3.3	3 39 10.07	16	3.551	+ 23 40 8.5	2	11.56	
420	Weisse III, 751	9.0	3 39 39.56	1	2.839	— 12 1		11.53	
421	Weisse III, 752	8.2	3 39 40.66	1	2.838	12 4		11.53	
422	τ^6 Eridani	4.0	3 40 49.35	1	2.591	— 23 40		11.45	
423	27 Tauri		3 40 50.56	4	3.552	+ 23 37 18.9	1	11.44	
424	28 Tauri		3 40 51.80	2	3.554	23 42		11.44	
425	Anonymous		3 40 54.62	1	3.553	23 40		11.44	
426	Anonymous		3 40 55.96	1	3.555	23 44		11.43	
427	B. A. C. 1188		3 41 39.40	1	3.549	+ 23 25		11.38	
428	Lacaille 1231		3 42 6.71	1	2.516	— 26 45		11.35	
429	B. A. C. 1190	8.0	3 42 33.16	3	3.553	+ 23 32 4.2	1	11.32	
430	Radcliffe 1084	7.7	3 42 40.43	1	4.010	+ 40 21		11.31	
431	Lacaille 1239	7.6	3 43 7.32	1	2.522	— 26 27		11.28	
432	O. Arg. S. 2571	8.0	3 43 43.28	1	2.494	— 27 34		11.24	
433	ζ Persei		3 45 20.34	1	3.753	+ 31 28		11.12	
434	Lacaille 1252		3 45 45.03	1	2.393	— 31 21		11.09	12s. greater than Lacaille.
435	Lalande 7184	7.5	3 46 27.12	1	3.541	+ 22 47		11.04	
436	B. Z. 391, 127	8.6	3 46 35.84	3	3.472	+ 19 41		11.03	
437	Lacaille 1259	7.0	3 46 45.11	1	2.605	— 22 39		11.01	7s. less than Lacaille.
438	B. A. C. 1211		3 46 47		9.614	80 18 14.6	1	11.01	
439	B. Z. 391, 128	8.8	3 46 52.56	3	3.472	+ 19 41		11.00	
440	Lalande 7220	8.5	3 47 43.93	1	3.518	+ 22 43		10.94	
441	τ^8 Eridani	4.0	3 47 45.38	1	2.548	— 25 2		10.94	
442	Lacaille 1271	6.5	3 47 54.11	1	2.584	— 23 31		10.93	
443	Lalande 7238	8.0	3 48 10.36	1	3.542	+ 22 44		10.91	
444	33 Tauri	6.5	3 48 46.00	2	3.543	+ 22 46		10.87	
445	Lacaille 1291	7.5	3 50 32.20	1	2.418	— 30 4		10.74	2.5s. less than Lacaille.
446	Lacaille 1288	7.2	3 50 32.92	2	2.532	25 32		10.74	2.3s. less than Lacaille.
447	γ Eridani	3.0	3 51 29.97	10	2.792	— 13 55		10.66	
448	λ Tauri	4.0	3 52 55.53	1	3.316	+ 12 6		10.56	
449	Anonymous	9.2	3 54 37.48	1	2.483	— 27 17		10.43	
450	B. A. C. 1250	6.2	3 55 5.57	3	+ 2.388	+ 30 53		+ 10.40	

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451	Lacaille 1317	7.4	3 55 31.08	3	+ 2.490	— 26 56		+ 10.37	
452	A^1 Tauri	5.0	3 56 25.38	6	3.529	+ 21 41 46.5	1	10.30	
453	Lacaille 1324	7.4	3 56 40.74	2	2.438	— 28 55		10.28	
454	Lacaille 1326	7.2	3 56 40.90	1	2.272	34 52		10.28	
455	Lacaille 1329	6.5	3 57 43.14	2	2.505	— 26 13		10.20	
456	ε Persei	5.0	3 58 30.60	1	4.325	+ 47 20		10.14	
457	Lacaille 1341	7.6	3 59 17.75	4	2.387	— 30 38		10.08	5.5s. less than Lacaille.
458	O. Arg. S. 2793 . . .	8.6	3 59 25.17	3	2.389	30 34		10.07	
459	O. Arg. S. 2796 . . .	6.0	3 59 38.55	1	2.530	20 54		10.06	
460	Lacaille 1346		4 0 5.01	1	2.364	31 25		10.02	
461	Anonymous	8.0	4 0 13.40	1	2.364	31 25		10.01	
462	Rumker 1104	9.0	4 3 41.94	1	3.695	+ 28 4		9.75	
463	Anonymous		4 3 48		2.662	— 19 22 17.4	1	9.74	
464	Lacaille 1370	7.4	4 4 5.84	2	2.516	25 24		9.71	
465	Lacaille 1374	6.5	4 4 47.05	1	2.255	34 52		9.66	2.5s. less than Lacaille,
466	Lacaille 1373	7.7	4 4 52.83	2	2.514	25 27		9.65	
467	o^1 Eridani	4.5	4 5 2.02	8	2.924	7 12		9.64	
468	Lacaille 1379	6.6	4 6 51.74	2	2.543	— 24 11		9.50	
469	B. Z. 521, 8	8.0	4 7 0.08	1	3.590	+ 23 43		9.49	
470	Lacaille 1387	6.0	4 7 39.73	1	2.301	— 33 9		9.44	
471	B. A. C. 1308	7.1	4 8 30.12	2	2.376	30 28		9.38	
472	Lacaille 1389	6.7	4 8 33.59	1	2.322	— 32 23		9.37	
473	B. Z. 330, 7	7.0	4 8 50.63	2	3.408	+ 15 52		9.35	
474	ω^2 Tauri		4 9 3.75	2	3.508	+ 20 14		9.33	
475	Lacaille 1395	7.6	4 9 32.83	3	2.376	— 30 26		9.30	
476	O. Arg. S. 2938 . . .	6.4	4 9 48.07	1	2.554	— 23 35		9.28	
477	γ Tauri		4 11 49.77	5	3.397	+ 15 17		9.12	
478	Lacaille 1410	7.6	4 12 35.28	2	2.251	— 34 31		9.06	
479	B. A. C. 1334	6.5	4 12 38.68	2	2.558	23 18		9.06	
480	B. A. C. 1340	6.6	4 13 51.25	3	2.505	25 22		8.96	
481	O. Arg. S. 2997 . . .	8.0	4 13 56.64	1	2.405	— 29 8		8.95	
482	δ^1 Tauri		4 14 51.92	2	3.443	+ 17 13		8.88	
483	Anonymous	9.0	4 15 5.28	1	3.537	+ 21 12		8.86	
484	B. A. C. 1355	5.7	4 15 42.74	4	2.485	— 26 4		8.81	
485	Lacaille 1433	7.5	4 16 50.75	1	2.221	35 14		8.72	2.6s. less than Lacaille.
486	Lacaille 1431	6.0	4 17 14.68	3	2.505	25 13		8.69	5s. lsss than Lacaille.
487	Anonymous		4 17 31		2.492	25 42 46.8	1	8.67	
488	Lacaille 1449		4 20 16.19	1	2.191	— 36 0		8.46	2.5s. less than Lacaille.
489	ε Tauri	3.5	4 20 26.70	11	3.486	+ 18 52		8.44	
490	Lacaille 1451	5.8	4 21 3.84	2	2.522	— 24 23		8.39	
491	Lacaille 1459	7.7	4 21 52.18	2	2.396	— 29 34		8.33	
492	B. Z. 330, 27	8.0	4 23 22.51	1	3.411	+ 15 31		8.21	
493	Lacaille 1474	6.8	4 23 47.51	1	2.461	— 26 35		8.17	
494	85 Tauri	6.5	4 23 52.19	2	3.412	+ 15 33		8.17	
495	Lacaille 1480 . . .	7.5	4 24 9.70	2	2.385	— 29 20		8.14	
496	Lacaille 1485	7.5	4 24 22.78	2	2.389	29 11		8.13	
497	Lacaille 1483		4 24 53.28	1	2.544	23 19		8.09	
498	Lacaille 1419	7.3	4 25 46.02	2	2.387	29 11		8.01	2.7s. less than Lacaille.
499	Lacaille 1501	7.2	4 26 30.47	2	2.486	29 6		7.96	
500	Lacaille 1504	7.5	4 26 49.51	1	2.486	— 25 31		7.93	8s. less than Lacaille.
501	B. Z. 393, 95	8.0	4 27 16.78	1	3.562	+ 21 44		7.89	
502	Weisse 572		4 27 18		3.074	+ 0 6 53.9	1	7.89	
503	Lacaille 1509	6.4	4 27 23.07	1	2.477	— 25 50		7.89	
504	α Tauri		4 27 53.46	25	3.430	+ 16 14		7.84	
505	Anonymous	9.0	4 28 44.10	1	3.568	21 55		7.78	
506	B. Z. 521, 33	9.0	4 29 40.53	1	3.629	+ 24 16		7.70	
507	Lacaille 1531	7.6	4 30 54.63	3	2.432	— 27 20		7.60	
508	B. Z. 393, 103	9.0	4 33 1.07	1	3.584	+ 22 24		7.43	
509	Lacaille 1541	7.5	4 33 19.26	3	2.406	— 28 11		7.41	
510	B. Z. 393, 105	8.4	4 33 20.34	1	3.586	+ 22 27		7.40	
511	Rumker 1250	7.0	4 33 48.24	1	3.592	+ 22 43		7.37	
512	τ Tauri		4 33 50.78	5	3.592	+ 22 41		7.36	
513	Weisse IV, 732 . . .	8.5	4 34 0.87	1	3.145	+ 3 23		7.35	
514	Anonymous	10.0	4 34 2.35	1	2.398	— 28 26		7.35	
515	B. A. C. 1450	5.7	4 34 17.46	2	+ 2.498	— 24 46		+ 7.33	

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516	Lacaille 1549	7.1	4 35 6.81	3	+ 2.397	− 28 26		+ 7.26	
517	Lalande 8870	7.0	4 35 29.84	1	3.593	+ 22 41		7.23	
518	Lalande 8923	7.8	4 37 6.32	1	2.997	− 3 26		7.10	
519	Weisse IV, 809	8.0	4 37 33.53	1	3.035	1 42		7.06	
520	μ Eridani	4.1	4 38 30.21	10	2.995	3 31		6.98	
521	Lacaille 1570	6.8	4 38 52.94	2	2.398	− 28 15		6.95	3.6s. greater than Lacaille.
522	α Camelopardi	4.2	4 40 9.44	4	5.908	+ 66 6		6.85	
523	B. Z. 521, 49	8.5	4 40 40.50	1	3.646	+ 24 33		6.80	
524	Weisse IV, 888	8.5	4 41 32.85	1	3.037	− 1 36		6.73	
525	i Tauri	5.5	4 43 11.19	3	3.497	+ 18 36		6.60	
526	O. Arg. N. 5260	7.3	4 44 15.59	3	4.654	+ 51 22		6.51	
527	Lacaille 1613	7.2	4 44 52.97	2	2.416	− 27 22		6.46	
528	Lacaille 1615	7.2	4 45 21.90	2	2.466	25 34		6.42	
529	B. A. C. 1511		4 46 22.62	1	2.179	− 35 9		6.33	2s. less than B. A. C.
530	Lalande 9207	8.0	4 46 41.05	1	3.101	+ 1 20		6.31	
531	ι Aurigæ	3.4	4 47 52.82	8	3.896	+ 32 56		6.21	
532	Lacaille 1642	7.0	4 48 7.44	1	2.064	− 38 23		6.19	
533	Lalande 9261	7.5	4 48 46.11	1	3.103	+ 1 24		6.13	
534	Lacaille 1652	6.5	4 49 15.29	2	2.062	− 38 24		6.09	
535	Lalande 9291	8.0	4 49 35.07	1	3.101	+ 1 18		6.06	
536	Lacaille 1648	6.4	4 49 46.54	1	2.452	− 25 56		6.05	
537	Anonymous	9.5	4 50 20.27	1	3.104	+ 1 26		6.00	
538	B. Z. 393, 127	8.0	4 51 45.09	1	3.598	22 23		5.88	
539	B. Z. 393, 128	8.2	4 52 8.81	1	3.600	+ 22 24		5.85	
540	Anonymous	6.0	4 53 2.66	2	2.368	− 28 47		5.78	
541	Lacaille 1673	6.8	4 53 36.46	3	2.368	28 47		5.73	
542	Anonymous	8.7	4 54 28.62	1	2.367	− 28 47		5.66	
543	ι Tauri		4 54 43.80	2	3.574	+ 21 23		5.63	
544	B. Z. 398, 110	7.0	4 55 18.23	1	3.822	30 17		5.59	
545	B. Z. 398, 111	8.2	4 55 37.14	2	3.819	30 12		5.56	
546	B. Z. 398, 112	8.2	4 55 38.41	2	3.819	30 11		5.56	
547	11 Orionis		4 56 34.32	2	3.421	15 12		5.48	
548	B. Z. 398, 116	8.5	4 59 31.15	1	3.825	30 16		5.23	
549	l Tauri		4 59 31.39	1	3.548	+ 20 14		5.23	
550	ε Leporis	3.3	4 59 32.15	5	2.536	− 22 34		5.23	
551	15 Orionis		5 1 41		3.428	+ 15 24 55.9	1	5.05	
552	B. Z. 513, 5	8.6	5 3 39.22	2	3.828	+ 30 16		4.88	
553	Lacaille 1738	6.6	5 5 3.40	2	2.436	− 26 5		4.76	
554	Anonymous	9.0	5 5 5.26	1	3.828	+ 30 14		4.76	
555	B. Z. 513, 7	7.5	5 5 17.49	2	3.828	+ 30 14		4.74	
556	B. A. C. 1615		5 6 6.43	1	2.309	− 30 24		4.67	
557	α Aurigæ		5 6 21.12	8	4.413	+ 45 51		4.65	
558	Lacaille 1753	6.6	5 7 15.78	2	2.398	− 27 21		4.57	
559	Anonymous	7.3	5 7 19.84	2	2.399	27 20		4.57	
560	β Orionis		5 7 48.67	14	2.880	8 22		4.53	
561	Lacaille 1763	6.8	5 8 50.26	2	2.425	− 26 22		4.44	
562	κ Tauri	6.0	5 10 52.03	2	3.598	+ 21 26 54.3	1	4.27	
563	Lacaille 1779		5 10 52.38	1	2.449	− 25 29		4.27	
564	B. Z. 513, 14	8.5	5 11 2.72	1	3.837	+ 30 22		4.25	
565	Lacaille 1787	7.5	5 11 41.79	2	2.273	− 31 26		4.20	
566	B. A. C. 1655	4.7	5 13 48.91	1	2.389	27 31		4.01	
567	Lacaille 1798	6.6	5 14 5.56	2	2.431	26 5		3.99	
568	B. A. C. 1670, (1st star)	6.2	5 16 1.54	3	2.462	24 55		3.82	
569	B. A. C. 1670, (2d star)	9.0:	5 16 1.80	2	2.462	− 24 55		3.82	
570	B. Z. 513, 24	8.0	5 16 36.60	2	3.848	+ 30 34		3.77	
571	B. Z. 513, 25	8.5	5 16 38.64	2	3.847	30 33		3.77	
572	β Tauri		5 17 26.63	15	3.785	+ 28 29		3.70	
573	B. A. C. 1688	6.2	5 17 34.45	1	2.407	− 26 50		3.69	
574	Lacaille 1827	7.7	5 17 57.57	1	2.254	− 31 52		3.66	
575	115 Tauri		5 19 0.19	1	3.495	+ 17 50 18.2	1	3.57	
576	B. A. C. 1708	7.0	5 20 33.57	1	2.791	− 12 1		3.43	
577	B. A. C. 1706	5.6	5 21 1.44	3	7.970	+ 74 57		3.39	
578	B. A. C. 1713	7.3	5 21 47.26	2	2.409	− 26 42		3.33	
579	Anonymous	8.0	5 22 3.54	1	2.409	− 26 41		3.31	
580	Anonymous	9.5	5 22 36.10	1	+ 6.750	+ 70 16		+ 3.26	

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581	O. Arg. N. 5930	8.0	5 22 55.12	2	+ 6.751	+ 70 16		+ 3.23	
582	Rumker 1450	8.0	5 23 13.49	1	3.732	+ 26 35		3.20	
583	Anonymous	9.0	5 23 31.53	1	3.063	− 0 24		3.18	
584	Weisse V, 603	9.0	5 24 51.27	2	3.063	0 23		3.06	
585	δ Orionis	2.5	5 24 51.33	14	3.063	0 24		3.06	
586	α Leporis	2.8	5 26 33.41	2	2.644	17 56		2.92	
587	B. A. C. 1761	6.6	5 28 28.50	1	2.308	29 57		2.75	
588	ε Orionis	2.0	5 29 6.67	9	3.042	− 1 18		2.69	
589	O. Arg. N. 6032		5 29 15.71	1	6.490	+ 68 48		2.68	
590	ζ Tauri		5 29 16.78	6	3.582	+ 21 3		2.68	
591	Lacaille 1906	7.4	5 30 35.93	1	2.286	− 30 39		2.57	4s. less than Lacaille.
592	Anonymous	9.0	5 31 12.01	1	6.757	+ 70 12		2.51	
593	O. Arg. N. 6082	8.0	5 31 43.53	2	6.757	+ 70 12		2.47	
594	B. A. C. 1783		5 31 44.73	1	2.368	− 27 57		2.47	
595	Lacaille 1913	7.4	5 32 5.22	1	2.401	26 48		2.44	
596	Lacaille 1918	7.1	5 32 32.58	1	2.387	27 18		2.40	
597	α Columbæ	3.0	5 34 34.81	3	2.171	34 9		2.22	
598	Lacaille 1945	7.0	5 35 28.67	1	2.310	29 48		2.14	
599	Lacaille 1946	7.8	5 35 40.62	1	2.411	− 26 25		2.12	
600	O. Arg. N. 6159	7.2	5 35 56.92	2	6.986	+ 71 14		2.10	
601	Lacaille 1960	8.7	5 36 48.06	1	2.371	− 27 48		2.02	
602	B. A. C. 1812	5.8	5 36 51.52	2	2.265	− 30 36		2.02	
603	129 Tauri		5 38 42.54	2	3.448	+ 15 45 53.0	1	1.86	
604	O. Arg. S. 4282	8.0	5 39 28.28	1	2.488	− 23 41		1.79	
605	Lacaille 1977		5 39 58.24	2	2.249	31 43		1.75	
606	Lacaille 1978	7.1	5 40 25.52	3	2.488	− 23 41		1.71	4.5s. less than Lacaille.
607	Anonymous	9.0	5 41 22.10	1	3.714	+ 25 44		1.63	
608	Lacaille 1991	7.6	5 41 47.14	2	2.387	− 27 11		1.59	
609	Anonymous	9.2	5 42 16.29	2	7.080	+ 71 36		1.55	
610	Anonymous	8.8	5 42 19.04	1	7.084	71 37		1.55	
611	O. Arg. N. 6250	8.9	5 42 19.39	4	7.065	+ 71 32		1.55	
612	B. A. C. 1860	6.6	5 44 2.76	1	2.505	− 23 1		1.39	
613	χ^1 Orionis		5 46 5.52	3	3.556	+ 20 15		1.21	
614	Lacaille 2023	7.3	5 46 12.27	1	2.452	− 25 16		1.21	
615	α Orionis		5 47 35.60	19	3.564	+ 7 23		1.08	
616	B. A. C. 1894		5 48 48.40	1	2.326	− 29 16		0.98	
617	O. Arg. N. 6356	8.0	5 48 59.00	1	7.278	+ 72 23		0.96	
618	Lacaille 2048		5 49 3.22	1	2.401	− 26 41		0.96	
619	O. Arg. N. 6362	7.6	5 49 36.20	1	7.334	+ 72 36		0.91	
620	Lacaille 2062	6.6	5 50 44.42	2	2.498	− 23 14		0.81	3.4s. less than Lacaille.
621	σ Columbæ	5.9	5 51 4.97	1	2.256	− 31 24		0.78	
622	O. Arg. N. 6390	8.6	5 51 25.40	2	7.260	+ 72 18		0.75	
623	Anonymous		5 52 34.98	1	3.646	23 16		0.65	
624	Lalande 11343		5 52 36.94	1	3.647	+ 23 18		0.64	
625	B. A. C. 1915	7.1	5 52 42.67	1	2.237	− 32 0		0.64	6.5s. greater than B. A. C.
626	B. Z. 518, 90	8.3	5 54 45.18	1	3.986	+ 34 22		0.46	
627	Lacaille 2096		5 55 31.97	1	2.437	− 25 25		0.39	
628	χ^4 Orionis		5 55 36.40	2	3.562	+ 20 8		0.38	
629	1 Geminorum	5.0	5 55 36.70	1	3.647	23 16 2.6	1	0.38	
630	Anonymous	9.4	5 56 30.47	2	7.604	+ 73 34		0.30	
631	B. A. C. 1946	5.9:	5 57 37.21	3	2.411	− 26 17		0.21	
632	Anonymous	9.0	5 57 45.56	2	7.610	+ 73 35		0.20	
633	Lalande 11513	6.5	5 57 58.20	1	4.054	36 17		0.18	
634	Lalande 11528	6.7	5 58 29.17	1	4.047	36 5		0.13	
635	ν Orionis	5.7	5 59 34.74	8	3.425	14 47		+ 0.04	
636	Lalande 11684	7.6	6 2 11.54	2	3.725	26 2		− 0.19	
637	Lalande 11714	8.8	6 3 3.21	2	3.725	26 1		0.27	
638	22 Camelopardi	5.2	6 3 24.80	4	6.623	+ 69 22		0.30	
639	Lacaille 2163	7.5	6 4 12.27	1	2.268	− 31 2		0.37	4s. less than Lacaille.
640	η Geminorum		6 6 25.56	5	3.627	+ 22 32 38.2	1	0.56	
641	Anonymous	7.8	6 6 29.06	1	2.374	− 27 35		0.57	
642	71 Orionis		6 6 36.60	1	3.537	+ 19 12		0.58	
643	Anonymous	6.5	6 7 8.84	2	2.370	− 27 42		0.63	
644	Anonymous	6.8	6 7 10.27	1	2.370	27 43		0.63	
645	Anonymous	7.2	6 7 22.98	2	+ 2.370	− 27 42		− 0.65	

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646		B. Z. 522, 159	8.5	6 7 27.19	1	+ 4.232	+ 40 56		— 0.65	
647		Lacaille 2190		6 7 58.26	1	2.482	— 23 49		0.70	
648		O. Arg. N. 6682 . . .	7.5	6 8 9.81	1	7.578	+ 73 30		0.71	
649		B. A. C. 2027	6.6	6 10 33.78	2	2.309	— 29 45		0.92	
650		B. Z. 511, 63	7.5	6 12 5.47	1	4.382	+ 48 28		1.06	
651		Lacaille 2219	6.5	6 13 12.40	1	2.451	— 24 59		1.15	
652		Lacaille 2220	6.8	6 13 31.99	1	2.452	— 24 55		1.18	
653	μ	Geminorum		6 14 29.40	7	3.627	+ 22 34 54.6	1	1.27	
654		Lacaille 2226		6 14 46.75	2	2.491	— 23 32		1.29	3s. less than Lacaille.
655		Lacaille 2254		6 18 6.32	1	2.309	— 29 48		1.58	
656		O. Arg. N. 6864 . . .	9.0	6 18 40.02	1	8.612	+ 76 28		1.63	
657		Lacaille 2262	6.8	6 19 17.55	2	2.342	— 28 42		1.69	
658		Lacaille 2271	6.2	6 20 16.36	2	2.315	— 29 37		1.77	
659		Anonymous	8.0	6 20 34.78	1	3.565	+ 20 20		1.80	
660	ν	Geminorum	6.0	6 20 38.98	4	3.564	+ 20 18		1.80	
661		B. A. C. 2100 . . .	6.0	6 21 32.94	1	2.429	— 25 46		1.88	
662		Lacaille 2288	7.4	6 22 30.68	2	2.393	27 4		1.96	
663		Lacaille 2306	7.2	6 24 42.69	2	2.265	— 31 6		2.16	3s. less than Lacaille.
664		O. Arg. N. 7009 . . .	8.0	6 24 59.71	1	4.655	+ 49 59		2.18	
665	ζ¹	Canis Majoris	4.3	6 26 1.41	3	2.499	— 23 19		2.27	
666		O. Arg. N. 7032 . . .	8.0	6 26 21.29	1	4.558	+ 48 13		2.30	
667		Lalande 12614	7.5	6 27 46.60	1	3.467	+ 16 35		2.42	
668		Lacaille 2342	8.2	6 29 32.40	1	2.433	— 25 44		2.58	
669	γ	Geminorum	2.0	6 29 37.43	24	3.465	+ 16 30 56.4	2	2.59	
670		Lacaille 2355	6.7	6 30 40.99	2	2.346	— 28 43		2.68	
671		Lacaille 2366	6.8	6 31 34.24	2	2.350	28 35		2.75	
672		Lacaille 2370	7.0	6 32 33.18	2	2.498	— 23 27		2.84	2.5s. less than Lacaille.
673	51	(Hev.) Cephei		6 33 38		30.591	+ 87 14 53.1	1	2.93	
		S. P.					54.6	7		
674		Lacaille 2392	6.7	6 35 3.07	1	2.365	— 28 8		3.06	
675	ε	Geminorum		6 35 19.04		3.696	+ 25 16		3.08	
676		Lacaille 2413	6.5	6 37 38.82	1	2.364	— 28 13		3.28	
677		Lacaille 2420	7.5	6 38 19.37	1	2.386	27 29		3.34	3s. less than Lacaille.
678	α	Canis Majoris		6 38 58.64	27	2.681	16 32		3.30	
679		Lacaille 2427	6.5	6 39 16.76	1	2.394	27 13		3.42	
680		O. Arg. S. 5654 . . .	8.5	6 40 28.48	1	2.352	28 40		3.52	
681		Lacaille 2443	7.0	6 40 50.13	1	2.330	29 24		3.55	
682		Lacaille 2448, (1st star) .	8.0	6 41 56.84	2	2.360	28 26		3.65	
683		Lacaille 2448, (2d star) .	8.8	6 41 57.79	1	2.360	28 27		3.65	
684		Lacaille 2454	7.0	6 43 5.22	2	2.371	28 4		3.75	
685		O. Arg. S. 5725 . . .	9.0	6 43 6.65	1	2.367	28 12		3.75	
686		Lacaille 2461	7.1	6 43 49.68	3	2.488	23 59 48.3	1	3.81	
687		Lacaille 2462	6.2	6 43 55.41	3	2.490	23 55 43.0	1	3.82	
688		Lacaille 2464		6 43 56.21	1	2.360	28 29		3.82	
689		Anonymous	7.5	6 43 59.27	1	2.396	27 15		3.82	
690		B. A. C. 2244		6 44 30.17	1	2.398	27 10		3.87	
691		O. Arg. S. 5809 . . .	6.5	6 45 58.25	1	2.422	26 22		4.00	
692		O. Arg. S. 5814 . . .	6.7	6 46 10.27	1	2.421	26 25		4.01	
693		Anonymous	7.5	6 47 52.77	2	2.482	24 17		4.16	
694		Lalande 13393	5.0	6 48 8.30	2	2.480	24 22		4.18	
695	o¹	Canis Majoris	3.5	6 48 19.44	2	2.489	24 1		4.20	
696		Lacaille 2507	6.6	6 48 23.57	2	2.497	23 44		4.20	
697		Lacaille 2519	6.5	6 49 2.79	1	2.268	31 36		4.26	
698		Lacaille 2524	6.5	6 49 45.12	1	2.353	28 51		4.32	
699		Lacaille 2526	7.2	6 50 9.13	2	2.453	25 22		4.35	
700		Lacaille 2528	6.0	6 50 37.14	1	2.269	31 36		4.39	
701		Anonymous	7.8	6 51 7.79	1	2.469	24 48		4.44	
702		O. Arg. S. 5961 . . .	6.3	6 52 6.95	2	2.398	— 27 21		4.52	
703		(* 78) W.	8.3	6 52 19.58	1	3.670	+ 24 40		4.54	
704		Lacaille 2543	5.3	6 52 30.23	3	2.409	— 26 59		4.55	
705	ε	Canis Majoris		6 53 7.48	5	2.357	— 28 47		4.61	
706	ω	Geminorum		6 53 52.88	1	3.662	+ 24 25		4.67	
707		Lacaille 2560	7.0	6 54 12.06	1	2.375	— 28 13		4.70	
708		Lacaille 2571	6.3	6 55 10.44	1	2.374	28 16		4.78	5s. less than Lacaille.
709		Lacaille 2570	4.2	6 55 20.68	2	2.690	— 25 1		4.80	
710	ξ	Geminorum		6 55 48.23	4	+ 3.564	+ 20 46		— 4.83	

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711		Lacaille 2577		6 55 56.08	1	+ 2.410	— 27 2		— 4.84	
712	γ	Canis Majoris	3.6	6 57 25.49	7	2.714	15 26		4.97	
713		Lacaille 2610	6.0	7 0 36.68	1	2.313	— 30 27		5.24	
714		(* 79) W.	7.5	7 1 19.77	1	3.608	+ 22 35		5.30	
715		Lacaille 2617		7 1 31.50	1	2.508	— 23 37		5.32	
716	τ	Geminorum		7 2 13.44	1	3.830	+ 30 28		5.38	
717	δ	Canis Majoris		7 2 41.99	1	2.439	— 26 10		5.42	
718		Lacaille 2634	6.5	7 2 58.91	1	2.504	23 48		5.44	
719		O. Arg. S. 6311	8.9	7 3 52.54	1	2.507	— 23 43		5.52	
720		O. Arg. N. 7623	7.0	7 3 53.22	1	6.394	+ 78 30		5.52	
721		Lacaille 2647		7 4 42.01	1	2.410	— 27 16		5.59	
722		Anonymous	7.3	7 5 6.18	1	2.318	30 25		5.62	
723		Lacaille 2655		7 6 27.21	2	2.416	27 6		5.73	3.7s. greater than Lacaille.
724	26	Canis Majoris		7 6 28.48	1	2.455	— 25 43		5.73	
725		O. Arg N. 7681		7 7 33		9.742	+ 79 8 33.4	1	5.83	
726		Lacaille 2666	6.3	7 7 58.10	1	2.417	— 27 7		5.86	
727		Anonymous	8.5	7 8 2.24	1	2.745	14 19		5.87	
728		Weisse VII, 250	7.0	7 8 44.74	1	2.747	14 15		5.92	
729		B. A. C. 2393		7 9 11.80	1	2.427	26 48		5.96	
730		B. A. C. 2394	7.0	7 9 12.34	1	2.322	30 25		5.96	
731		B. A. C. 2399		7 9 56.00	1	2.322	— 30 27		6.02	
732	λ	Geminorum		7 10 2.72	5	3.457	+ 16 47		6.03	
733		B. A. C. 2320 S. P.		7 10 11.38	1	77.898	89 0 21.4	1	6.05	
734		O. Arg. N. 7755	8.0	7 11 9.52	1	9.601	78 58		6.13	
735	δ	Geminorum		7 11 45.53	11	3.592	+ 22 14		6.18	
736	30	Canis Majoris	3.8	7 12 54.24	2	2.488	— 24 42		6.27	
737		Lacaille 2726		7 13 24.54	2	2.488	24 42		6.31	
738		Anonymous	8.0	7 14 8.38	1	2.324	30 32		6.37	
739		Lacaille 2747		7 15 13.91	1	2.436	— 26 42		6.47	
740	ν	Geminorum		7 17 1.72	1	3.744	+ 28 4		6.61	
741	s	Puppis	4.5	7 17 39.45	1	2.294	— 31 39		6.67	
742		B. A. C. 2455		7 18 33.60	2	3.576	+ 21 49		6.74	
743		O. Arg. S. 6762	6.0	7 18 40.72	1	2.645	— 18 44		6.75	
744		Weisse VII, 551	7.0	7 18 44.74	1	3.314	+ 11 1		6.76	
745		B. A. C. 2461	4.5	7 19 22.06	2	2.300	— 31 32		6.80	
746	63	Geminorum		7 19 25.64	1	3.573	+ 21 44		6.80	
747		Lacaille 2797	7.3	7 19 50.62	1	2.450	— 26 20		6.85	
748		B. A. C. 2466		7 20 20.52	2	2.303	31 28		6.89	
749		Lacaille 2814	7.5	7 22 13.00	2	2.403	28 6		7.04	
750		Lacaille 2813	7.0	7 22 19.33	1	2.445	— 26 35		7.05	
751		B. Z. 276, 244	8.5	7 23 38.38	1	3.423	+ 15 38		7.16	
752		B. Z. 276, 245	8.0	7 23 38.61	1	3.422	+ 15 37		7.16	
753		B. A. C. 2484	4.0	7 25 16.05	1	2.333	— 30 40		7.29	
754	68	Geminorum		7 25 36.99	2	3.432	+ 16 8		7.32	
755	α^1	Geminorum		7 25 39.29	4	3.856	32 11		7.32	
756	α^2	Geminorum		7 25 39.73	15	3.856	+ 32 11 30.5	1	7.32	
757		Lacaille 2852		7 28 8.25	1	2.264	— 33 6		7.52	
758	g	Puppis	5.0	7 28 42.73	1	2.473	25 49		7.57	
759		Lacaille 2859		7 28 56.55	1	2.263	33 10		7.59	
760		Anonymous		7 29 13.88	1	2.473	25 49 ?		7.61	
761		O. Arg. S. 7063	7.5	7 29 14.03	1	2.383	29 6		7.61	
762		Lacaille 2864		7 29 46.42	1	2.474	25 49		7.66	
763		Lacaille 2873		7 30 33.16	1	2.268	33 5		7.72	
764		Lacaille 2876		7 31 21.86	1	2.537	— 23 27		7.78	4s. less than Lacaille.
765	α	Canis Minoris		7 31 58.35	28	3.192	+ 5 34 48.7	1	7.83	
766		Lacaille 2908		7 34 54.27	1	2.372	— 29 45		8.07	
767		O. Arg. S. 7237		7 34 56.98	1	2.373	29 44		8.07	
768	κ	Geminorum		7 35 59.50	1	3.635	+ 24 44		8.16	
769		O. Arg. S. 7286	7.0	7 36 34.61	1	2.372	— 29 51		8.20	
770	β	Geminorum		7 36 44.67	21	3.731	+ 28 21 40.6	1	8.22	
771	g	Geminorum		7 38 0.98	2	3.487	+ 18 51		8.32	
772		O. Arg. S. 7376	8.0	7 39 35.25	1	2.446	— 27 18		8.44	
773		Lacaille 2952		7 39 57.08	1	2.535	23 54		8.47	
774		O. Arg. S. 7470	7.5	7 43 5.29	1	2.365	30 25		8.72	
775		Lacaille 3006	4.3:	7 44 14.49	1	+ 2.294	— 32 56		— 8.81	

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				h. m. s.		s.	° ′ ″		″	
776	φ	Geminorum		7 44 55. 42	2	+ 3. 686	+ 27 7		— 8. 86	
777	1	Cancri	5. 8	7 49 2. 31	1	3. 416	+ 16 10		9. 19	
778		Lacaille 3061	7. 0	7 49 21. 80	1	2. 353	— 31 11		9. 21	3s. less than Lacaille.
779		O. Arg. S. 7669		7 49 54		2. 387	29 59 0. 0	1	9. 25	
780		Lacaille 3073		7 50 48		2. 391	29 59 58. 9	1	9. 32	
781		Lacaille 3078	6. 5	7 51 44. 46	2	2. 275	34 0		9. 40	
782		Anonymous		7 51 56		2. 391	— 29 57 35. 0	1	9. 41	
783	5	Cancri	6. 0	7 53 31. 33	2	3. 428	+ 16 50		9. 53	
784	6	Cancri		7 54 54. 86	5	3. 700	+ 28 11		9. 64	
785	ρ	Argus		8 1 34. 98	2	2. 561	— 23 54 8. 2	1	10. 15	
786		Lacaille 3184	7. 0	8 6 14. 86	1	2. 419	29 48		10. 50	
787		Lacaille 3192		8 7 7		2. 429	29 29 36. 6	1	10. 56	
788		Lacaille 3209	6. 8	8 8 4. 44	2	2. 382	31 20		10. 63	5. 1s. less than Lacaille.
789		Lacaille 3231	6. 0	8 10 15. 76	1	2. 408	30 30		10. 79	
790		Lacaille 3229	6. 6	8 10 18. 98	2	2. 428	29 45		10. 80	
791		Lacaille 3248	6. 5	8 11 58. 11	1	2. 359	32 26		10. 92	
792		B. A. C. 2790		8 12 16. 59	1	2. 436	29 34		10. 94	
793		Anonymous	8. 0	8 13 19. 60	1	2. 435	29 42		11. 02	
794		Anonymous	7. 5	8 14 0. 14	1	2. 436	— 29 43		11. 07	
795		B. A. C. 2787		8 14 7. 01	1	17. 356	+ 85 32		11. 08	
796		Lacaille 3267	6. 5	8 14 27. 22	1	2. 411	— 30 42		11. 10	
797		Lacaille 3266		8 14 33		2. 452	— 29 6 5. 4	1	11. 11	
798	d^1	Cancri	5. 5	8 15 20. 62	1	3. 450	+ 18 47		11. 17	
799		Weisse VIII, 381	8. 8	8 15 25. 91	1	3. 321	+ 12 38		11. 17	
800	ω	Puppis	5. 1	8 15 52. 30	3	2. 362	— 32 37		11. 21	
801		Lacaille 3290	7. 0	8 17 9. 05	1	2. 388	31 10		11. 30	2. 8s. less than Lacaille.
802		Lacaille 3302	7. 4	8 18 26. 74	2	2. 372	32 27		11. 39	
803		Lacaille 3312	6. 8	8 19 34. 67	2	2. 393	— 31 45		11. 47	12s. less than Lacaille.
804	29	Cancri		8 20 48. 36	2	3. 358	+ 14 40		11. 56	
805		B. A. C. 2843	6. 2	8 21 38. 87	2	2. 411	— 31 13		11. 62	
806		B. A. C. 2846	6. 6	8 21 57. 18	1	2. 549	— 25 40		11. 64	
807	θ	Cancri		8 23 36. 59		3. 436	+ 18 34		11. 76	
808	η	Cancri	4. 7	8 24 36. 48	10	3. 484	+ 20 55		11. 83	
809		Lacaille 3356		8 24 51		2. 406	— 31 41 27. 9	1	11. 85	
810		Lacaille 3361	6. 8	8 25 8. 21	3	2. 432	— 30 41		11. 87	
811		Anonymous	9. 0	8 27 53. 74	1	3. 263	+ 10 10		12. 06	
812		Lacaille 3388	7. 0	8 28 0. 07	2	2. 583	— 24 36		12. 07	
813		Lacaille 3399	6. 5	8 28 55. 43	2	2. 404	— 32 7		12. 13	
814	c^1	Cancri	6. 3	8 29 30. 24	4	3. 262	+ 10 8		12. 17	
815		Anonymous	7. 3	8 29 33. 45	1	2. 438	— 30 49		12. 18	
816		Lacaille 3419		8 30 35. 10	1	2. 439	30 51		12. 25	
817		B. A. C. 2910	6. 2	8 31 5. 64	2	2. 558	25 56		12. 28	
818	g	Mali	4. 8	8 31 53. 44	2	2. 563	25 46		12. 34	
819		Lacaille 3434		8 31 56. 46	2	2. 381	— 33 15		12. 34	
820		B. Z. 349, 8	8. 5	8 32 37. 39	1	3. 622	+ 27 36		12. 39	
821		Anonymous	6. 5	8 33 14. 30	1	2. 378	— 33 31		12. 43	
822		Lacaille 3449		8 33 50		2. 500	28 35 20. 2	1	12. 47	
823	f	Mali	4. 0	8 33 53. 96	2	2. 487	29 4		12. 48	
824		Lacaille 3459	7. 0	8 34 16. 78	2	2. 379	33 31		12. 50	
825		Anonymous	7. 3	8 34 29. 59	1	2. 380	— 33 31		12. 52	
826		B. Z. 349, 10	7. 4	8 35 30. 46	2	3. 619	+ 27 44		12. 59	
827		Lacaille 3469	7. 7	8 36 32. 22	3	2. 430	— 31 44		12. 66	
828	δ	Cancri		8 36 43. 48	5	3. 422	+ 18 40		12. 67	
829		Lacaille 3474	8. 0	8 37 14. 11	3	2. 498	— 29 1		12. 70	
830		Anonymous	7. 5	9 37 57. 32	1	2. 410	32 41		12. 75	
831	α	Mali	5. 0	8 37 58. 00	1	2. 410	— 32 41		12. 75	
832	ε	Hydræ		8 39 21. 58	11	3. 197	+ 6 55 48. 9	1	12. 85	
833		Lacaille 3509	6. 8	8 40 10. 20	2	2. 570	— 26 6		12. 90	
834		O. Arg. S. 8978	7. 2	8 40 44. 74	2	2. 500	29 15		12. 94	
835		O. Arg. S. 8979	7. 0	8 40 46. 12	2	2. 501	29 13		12. 94	
836		Lacaille 3531	6. 5	8 42 12. 78	1	2. 415	32 53		13. 04	
837		Lacaille 3529		8 42 20. 63	2	2. 529	28 8		13. 05	
838		Lacaille 3546	6. 7	8 43 40. 94	3	2. 479	30 25		13. 14	
839		Anonymous	8. 5	8 44 4. 57	2	2. 432	32 22		13. 16	
840		B. A. C. 3006	4. 7	8 44 10. 24	3	+ 2. 435	— 32 16		— 13. 17	

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				h. m. s.		s.	° ′ ″		″	
841		B. A. C. 3007	6.2	8 44 26.92	2	+ 2.534	— 28 6		— 13.19	
842		Lacaille 3564′	7.3	8 45 28.91	1	2.597	33 55		13.26	2.5s. less than Lacaille.
843		Lacaille 3567		8 46 1		2.559	27 7 .2	1	13.29	
844		Lacaille 3574	6.0	8 46 43.21	3	2.448	31 59		13.34	
845		Anonymous	7.2	8 47 6.37		2.447	32 4		13.36	
846	60	Cancri		8 48 16.72	2	2.858	12 10		13.44	
847		Lacaille 3582	7.8	8 48 25.60	2	2.461	31 37		13.45	
848		Anonymous	8.6	8 48 50.01	1	2.380	34 56		13.47	
849		Anonymous	7.8	8 49 12.61	1	2.378	35 2		13.50	
850		Anonymous	7.6	8 49 23.74	1	2.433	32 52		13.51	
851	d	Mali	4.5	8 49 31.36	2	2.566	27 9		13.52	
852		Lacaille 3595	7.0	8 49 44.22	3	2.434	— 32 52		13.53	
853	σ²	Cancri	5.5	8 49 45.88	1	3.357	+ 16 7		13.53	
854		Lacaille 3601	7.6	8 50 34.16	2	2.531	— 28 49		13.59	
855	α	Cancri		8 50 49.62	4	3.288	+ 12 24		13.60	
856		Lacaille 3607	7.8	8 51 32.92	2	2.569	— 27 11		13.65	
857		Lacaille 3617	7.0	8 52 59.97	3	2.476	31 26		13.74	
858		B. A. C. 3070	5.6	8 53 19.20	2	2.549	28 16		13.76	
859		Anonymous	9.0	8 53 39.97	1	2.397	34 50		13.78	
860		Lacaille 3621		8 53 43.04	2	2.571	27 16		13.79	
861		B. A. C. 3082	5.3	8 55 7.21	2	2.599	26 6 52.6	1	13.88	
862		Lacaille 3643	7.1	8 55 47.21	2	2.602	26 2		13.92	3s. less than Lacaille.
863		Lacaille 3656	6.5	8 57 4.93	3	2.476	— 31 53		14.00	
864	σ³	Ursæ Majoris	4.6	8 58 1.36	2	5.397	+ 67 42		14.06	
865		Lacaille 3671	5.8	8 59 8.67	1	2.559	— 28 26		14.13	6s. less than Lacaille.
866	κ	Cancri	5.2	9 0 9.68	10	3.260	+ 11 14		14.19	
867		Lacaille 3684	7.0	9 1 33.18	2	2.540	— 29 31		14.28	
868		B. A. C. 3121	4.0	9 1 54.34	1	2.629	— 25 18		14.30	
869		B. Z. 347, 31	7.5	9 2 10.12	1	3.549	+ 26 58		14.31	
870		Lacaille 3690	7.0	9 2 31.56	1	2.631	— 25 16		14.34	3.3s. less than Lacaille.
871		B. A. C. 3127	7.0	9 3 37.05	2	2.633	25 14		14.40	
872	ε	Mali	4.4	9 4 0.46	2	2.540	29 48		14.43	
873		Lacaille 3704	6.8	9 4 20.81	3	2.625	25 44		14.45	
874		Lacaille 3716	6.6	9 6 15.52	1	2.643	25 1		14.56	
875		Lacaille 3725	6.8	9 7 1.46	2	2.532	30 29		14.61	
876		Lacaille 3726	5.5	9 7 22.15	1	2.563	— 29 5		14.63	
877		B. Z. 347, 39	7.8	9 7 56.14	1	3.538	+ 27 3		14.66	
878		Lacaille 3733	6.5	9 8 30.40	2	2.504	— 31 58		14.70	
879		Lacaille 3739	7.7	9 9 6.11	2	2.553	29 46		14.73	
880		Lacaille 3750	6.6	9 9 45.55	2	2.490	— 32 45		14.77	
881	83	Cancri	6.0	9 11 9.77	6	3.369	+ 18 18		14.85	
882		B. A. C. 3174	5.0	9 11 27.84	1	2.350	— 38 49		14.87	
883		Anonymous	7.0	9 12 55.59	1	2.482	33 31		14.96	
884		B. A. C. 3190	6.1	9 13 59.60	2	2.485	33 31		15.02	
885		Lacaille 3788	7.5	9 14 43.63	2	2.598	28 13		15.06	
886		Lacaille 3802	7.0	9 16 47.22	1	2.569	— 29 55		15.18	
887	1	(Hev.) Draconis	5.0	9 16 48.25	3	9.241	+ 81 56		15.18	
		S. P.					20.8	6		
888		B. A. C. 3207	4.4	9 17 8.70	2	2.604	— 28 14		15.20	
889		Lacaille 3807	6.7	9 17 46.98	2	2.516	32 36		15.24	
890	α	Hydræ		9 20 42.48	7	2.951	8 3		15.40	
891		Lacaille 3834	6.5	9 20 43.69	1	2.510	— 33 17		15.40	
892	ω	Leonis		9 20 57.46	1	3.218	+ 9 40		15.42	
893		Anonymous	6.5	9 21 22.03	1	2.514	— 33 11		15.44	
894	d	Ursæ Majoris		9 22 1.99	1	5.466	+ 70 26		15.48	
		S. P.					31.8	1		
895		Lacaille 3843	7.2	9 22 23.57	2	2.679	— 24 50		15.50	
896	θ	Ursæ Majoris		9 23 28.46	1	4.164	+ 52 19		15.56	
897		B. A. C. 3243	6.3	9 23 28.47	2	2.661	— 25 59		15.56	
898		Lacaille 3857	7.4	9 23 30.49	2	2.680	24 55		15.56	
899		B. A. C. 3248	6.0	9 23 41.83	2	2.661	— 25 59		15.57	
900	ζ	Leonis		9 24 23.66	1	3.249	+ 11 55		15.61	
901	h	Leonis		9 24 27.07	2	3.225	+ 10 20		15.61	
902		Lacaille 3889	6.0	9 25 42.63	1	2.486	— 35 6		15.68	2.6s. greater than Lacaille.
903		Lacaille 3892	6.8	9 26 10.74	2	2.629	28 1		15.71	
904		Lacaille 3903	6.0	9 27 29.55	1	2.415	38 31		15.78	
905		Lacaille 3908	7.1	9 27 58.52	3	+ 2.571	— 31 20		— 15.80	

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			h. m. s.		s.	° ′ ″		″	
906	O. Arg. S. 9856 . . .	6.8	9 28 0.59	1	+ 2.569	− 31 24		− 15.81	
907	Lacaille 3918	6.2	9 29 22.68	1	2.496	− 35 12		15.83	
908	10 Leonis	5.1	9 29 49.03	3	3.179	+ 7 28		15.90	
909	Lacaille 3923	6.3	9 30 15.37	2	2.709	− 24 5		15.92	
910	Lacaille 3928	5.7	9 30 42.60	2	2.699	24 41		15.95	
911	B. A. C. 3296	5.5	9 31 8.46	2	2.575	31 33		15.97	
912	Lacaille 3945		9 31 41.46	1	2.606	− 30 3		16.00	
913	ο Leonis	4.0	9 33 40.51	7	3.220	+ 10 32		16.10	
914	Lacaille 3967	6.8	9 34 11.44	3	2.608	− 30 18		16.13	2.3s. less than Lacaille.
915	Lacaille 3976	6.5	9 35 44.82	1	2.624	29 40		16.21	
916	Anonymous	7.5	9 36 35.31	1	2.524	34 58		16.25	
917	Lacaille 3983	6.7	9 36 47.12	1	2.527	34 52		16.27	
918	Lacaille 3984	6.8	9 36 51.58	3	2.672	− 32 46		16.27	
919	ε Leonis		9 37 53.87	6	3.425	+ 24 25 2.3	1	16.32	
920	Lacaille 4002	7.5	9 40 5.52	2	2.687	− 26 38		16.43	
921	Lacaille 4007	6.5	9 40 14.79	2	2.577	32 52		16.44	
922	Lacaille 4031		9 42 47.08	2	2.556	− 34 22		16.57	
923	4 Sextantis		9 43 12.84	1	3.138	+ 5 0		16.59	
924	Weisse IX, 929 . . .	8.3	9 43 14.14	1	3.270	14 46		16.59	
925	μ Leonis	4.0	9 44 47.67	6	3.445	+ 26 40		16.67	
926	Lacaille 4046		9 44 56	1	2.628	− 30 51 22.9	1	16.67	
927	Lacaille 4052		9 45 50.36	2	2.605	− 32 19		16.72	
928	Anonymous	8.7	9 45 53.61	1	3.276	+ 15 25		16.72	
929	(* 114) W.	9.5	9 46 1.01	1	3.269	14 58		16.72	
930	Rumker 2988	8.0	9 46 11.11	1	3.275	+ 15 24		16.73	
931	B. A. C. 3385		9 46 42.05	1	2.703	− 26 41		16.76	
932	Lacaille 4058	8.0	9 47 47.45	1	2.695	27 20		16.81	
933	Lacaille 4065		9 48 31.06	2	2.578	− 34 15		16.84	
934	B. Z. 349, 81	8.0	9 48 51.88	1	3.469	+ 28 46		16.86	
935	Lacaille 4074	6.4	9 50 25.70	2	2.724	− 25 54		16.93	
936	B. A. C. 3405	5.5	9 50 28.87	1	2.611	32 45		16.94	
937	Lacaille 4076	6.6	9 50 34.83	1	2.710	− 26 49		16.94	
938	ν Leonis		9 50 41.34	3	3.238	+ 13 7		16.95	
939	Lacaille 4082	6.7	9 50 56.10	2	2.587	− 34 10		16.96	
940	Lacaille 4089	7.4	9 52 27.06	2	2.686	28 39		17.03	
941	π Leonis	5.0	9 52 48.76	8	3.180	+ 8 43		17.05	
942	Lacaille 4106, (1st star) .	9.0	9 55 33.01	1	2.704	− 28 1		17.17	
943	Lacaille 4106, (2d star) .	9.5	9 55 33.99	1	2.704	28 1		17.17	
944	Lacaille 4111	6.5	9 55 53.99	3	2.616	33 30		17.19	
945	Lacaille 4120	6.5	9 57 14.02	1	2.636	− 32 34		17.25	
946	Anonymous		9 58 26.40	1	3.223	+ 12 38		17.30	
947	Lacaille 4132		9 58 27.95	1	2.720	− 27 29		17.30	
948	Lacaille 4134	6.2	9 58 50.82	2	2.721	− 27 31		17.32	
949	B. Z. 406, 63	7.5	9 59 6.18	2	3.464	+ 30 12		17.33	
950	B. Z. 406, 64	9.2	9 59 8.90	1	3.463	+ 30 9		17.33	
951	Lacaille 4142	6.7	9 59 23.46	1	2.641	− 32 42		17.34	
952	A Leonis		10 0 28.34	1	3.198	+ 10 41		17.39	
953	α Leonis		10 0 54.80	12	3.221	+ 12 39 0.9	5	17.41	
954	Lacaille 4162	7.0	10 2 15.40	2	2.623	− 34 20		17.47	
955	B. A. C. 3466	6.0	10 2 31.59	1	3.649	+ 41 21		17.48	
956	Anonymous	8.5	10 2 39.38	1	2.660	− 32 10		17.48	
957	Lacaille 4165	7.0	10 3 20.38	2	2.662	− 32 10		17.51	
958	B. Z. 406, 68	8.3	10 3 43.44	1	3.460	+ 30 50		17.53	
959	Lalande 19854	8.0	10 5 20.59	1	3.476	+ 32 12		17.60	
960	Lacaille 4185	6.5	10 5 36.78	1	2.646	− 33 39		17.61	
961	Lacaille 4183		10 5 39.97	1	2.733	27 55		17.61	
962	Lacaille 4186	6.0	10 5 56.01	1	2.533	40 11		17.62	
963	Lacaille 4190	7.0	10 6 26.46	2	2.722	28 49		17.64	
964	Lacaille 4192	7.0	10 6 34.88	1	2.678	31 49		17.65	
965	Anonymous	7.0	10 6 56.90	1	2.541	− 39 58		17.66	
966	22 Leonis Minoris	6.0	10 7 3.51	1	3.471	+ 32 10		17.67	
967	B. A. C. 3497	6.0	10 7 48.77	1	2.551	− 39 39		17.70	
968	32 Ursæ Majoris		10 7 49.11	3	4.471	+ 65 48		17.70	
969	B. A. C. 3478	6.5	10 7 58.57	1	2.552	− 39 37		17.71	
970	B. Z. 454, 41		10 8 12.40	1	+ 3.635	+ 41 58		− 17.72	

Number.		Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
971		Radcliffe 2466	8.5	10 8 13.39	1	+ 3.635	+ 41 58		— 17.72	
972		B. A. C. 3495 . . S. P.		10 8 40		10.149	+ 84 57 33.0	3	17.74	
973		Lacaille 4218		10 9 41.55	2	2.744	— 27 56		17.77	
974		B. Z. 501, 29	9.0	10 10 34.15	1	3.446	+ 31 19		17.81	
975		B. A. C. 3521	6.0	10 11 42.89	2	2.744	— 28 18		17.86	
976	γ^1	Leonis		10 12 14.95	9	3.299	+ 20 32 54.5	1	17.88	
977	γ^2	Leonis		10 12 15.33	3	3.299	+ 20 33		17.88	
978		Lacaille 4245	6.5	10 12 56.95	2	2.667	— 33 55		17.91	
979		Anonymous	8.0	10 13 2.73	1	3.034	3 37		17.91	
980		Lacaille 4257	6.6	10 14 49.07	3	2.800	— 24 40		17.98	
981		B. Z. 501, 35		10 15 3.28	1	3.435	+ 31 33		17.99	
982		Lacaille 4266		10 15 56.56	2	2.748	— 28 52		18.02	
983		Lacaille 4267		10 16 24		2.816	23 37 34.0	1	18.04	
984		B. A. C. 3554	6.0	10 16 49.24	1	2.743	29 27		18.06	
985		B. A. C. 3557	5.2	10 17 21.71	3	2.628	37 18		18.08	
986	γ	Antliæ	7.0	10 17 29.61	2	2.752	— 28 56		18.08	
987	44	Leonis	5.6	10 17 52.45	1	3.168	+ 9 30		18.10	
988		Lacaille 4286	6.2	10 18 56.85	1	2.762	— 28 30		18.14	
989	35	Ursæ Majoris		10 19 54.90	1	4.362	+ 66 20		18.17	
990		Lacaille 4295	6.5	10 20 17.81	3	2.621	— 38 38		18.19	
991	a	Antliæ	4.4	10 20 44.94	2	2.744	30 21 20.4	1	18.20	
992		Lacaille 4307		10 22 54.36	2	2.653	37 21		18.28	
993		B. A. C. 3596	5.4	10 23 1.24	2	2.768	— 28 57		18.29	
994	9	(Hev.) Draconis . S. P.		10 23 6		5.346	+ 76 25 54.8	3	18.29	
995		Lacaille 4317	6.7	10 24 17.94	1	2.810	— 25 46		18.33	
996		Lacaille 4326	6.8	10 25 10.89	2	2.704	34 24		18.36	
997		Lacaille 4324	6.2	10 25 17.75	1	2.792	— 27 30		18.37	
998	ρ	Leonis		10 25 26.22	3	3.167	+ 10 2		18.37	
999		B. Z. 457, 12		10 26 0.54	1	3.221	+ 15 37		18.39	
1000		Lacaille 4340	6.8	10 27 17.67	2	2.808	— 26 37		18.44	
1001		Lacaille 4345	6.7	10 27 20.27	3	2.638	39 31		18.44	
1002		Lacaille 4349	6.8	10 28 20.36	1	2.764	30 37		18.47	
1003		Lacaille 4360	7.0	10 29 28.77	1	2.821	25 58		18.51	
1004		Lacaille 4363		10 30 2.90	1	2.779	28 3		18.53	
1005		Lacaille 4364	6.4	10 30 8.31	2	2.812	26 56		18.53	
1006		Lacaille 4374	6.8	10 31 20.37	3	2.719	— 34 59		18.57	
1007	38	Ursæ Majoris		10 32 20.97	1	4.217	+ 66 27		18.61	
1008		Lacaille 4382	7.2	10 32 31.12	2	2.828	— 25 7		18.61	
1009		Lacaille 4387		10 32 55.96	2	2.712	35 57		18.63	
1010		Lacaille 4389	6.8	10 33 26.21	3	2.753	32 53		18.64	
1011		Lacaille 4393	7.6	10 34 9.76	2	2.883	26 4		18.66	
1012		Lacaille 4399		10 34 28.46	1	2.730	— 35 1		18.67	
1013		B. Z. 499, 117	9.0	10 34 35.39	1	3.427	+ 36 7		18.68	
1014		Lacaille 4407		10 35 6.86	1	2.733	— 35 0		18.70	
1015		Lacaille 4406	7.4	10 35 13.80	2	2.843	— 25 19		18.70	
1016	34	Sextantis		10 35 23.64	2	3.108	+ 4 19		18.70	
1017		B. A. C. 3677	5.5	10 36 14.20	3	2.773	— 31 59		18.73	
1018		Anonymous	9.5	10 36 47.94	1	3.422	+ 36 22		18.75	
1019		B. Z. 491, 129	9.2	10 38 7.72	1	3.417	+ 36 25		18.79	
1020		Lacaille 4438	7.3	10 38 17.94	3	2.719	— 37 24		18.79	
1021		B. Z. 491, 130	8.5	10 38 19.84	1	3.411	+ 36 22		18.80	
1022	37	Sextantis		10 38 48.16	1	3.130	7 7		18.81	
1023	k	Leonis		10 39 0.16	1	3.195	+ 14 56		18.82	
1024		Lacaille 4450	6.0	10 39 33.60	1	2.683	— 40 14		18.83	
1025		O. Arg. S. 10887 . . .	6.6	10 41 0.28	2	2.802	30 52		18.88	
1026		Lacaille 4463	5.6	10 41 40.85	3	2.803	— 30 57		18.90	
1027	l	Leonis		10 41 53.76	8	3.161	+ 11 17		18.90	
1028		Lacaille 4481	7.2	10 43 9.64	2	2.681	— 41 38		18.94	
1029		Σ Cat. Gen. 1248 . . .	8.5	10 43 27.31	1	3.278	+ 25 12		18.95	
1030		Lacaille 4488	7.3	10 43 55.63	3	2.788	— 33 6		18.96	
1031		Weisse X, 803	8.0	10 44 37.27	1	3.164	+ 12 6		18.98	
1032	44	Ursæ Majoris		10 45 4.30	1	3.693	+ 55 20		18.99	
1033		Lacaille 4498	6.4	10 46 30.96	3	2.780	— 34 45		19.03	
1034		Lacaille 4503		10 46 42.80	1	2.723	39 41		19.04	
1035		Lacaille 4505	7.6	10 47 16.32	1	+ 2.869	— 26 0		— 19.05	

Number.	Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ″ ′		″	
1036	Lacaille 4508	7.0	10 47 30.00	2	+ 2.688	− 42 43		− 19.06	
1037	55 Leonis		10 48 30.15	1	3.082	+ 1 29		19.09	
1038	Anonymous	8.3	10 48 33.96	1	2.825	− 31 4		19.09	
1039	Lalande 21016	7.2	10 48 47.16	1	3.254	+ 24 0		19.10	
1040	Lacaille 4519	7.1	10 49 14.46	3	2.827	− 31 3		19.11	
1041	Lalande 21025	8.5	10 49 15.93	1	3.366	+ 35 57		19.11	
1042	O. Arg. N. 11279	8.0	10 49 40.44	2	3.772	60 2		19.12	
1043	B. Z. 353, 31		10 49 40.95	1	3.259	+ 24 53		19.12	
1044	Anonymous	7.5	10 50 18.28	2	2.720	− 41 18		19.14	
1045	B. Z. 499, 133	9.0	10 51 13.55	1	3.358	+ 35 53		19.16	
1046	Lacaille 4535	7.0	10 51 35.30	1	2.726	− 41 18		19.17	
1047	Anonymous	7.7	10 52 29.92	1	2.809	34 9		19.19	
1048	Lacaille 4539		10 52 39.50	1	2.883	− 26 1		19.20	
1049	O. Arg. N. 11325		10 52 57.71	1	3.507	+ 48 26		19.20	
1050	β Ursæ Majoris, S. P.		10 53 22		3.665	57 7 51.8	3	19.21	
1051	c Leonis		10 53 29.26	2	3.118	+ 6 51		19.22	
1052	Lacaille 4553		10 53 52.46	1	2.723	− 42 30		19.23	
1053	B. A. C. 3774	6.2	10 54 2.32	2	2.843	− 31 6		19.23	
1054	α Ursæ Majoris		10 55 3.34	7	3.790	+ 62 30 22.0	2	19.26	
	S. P.					20.0	4		
1055	B. Z. 499, 138	9.0	10 56 18.88	2	3.329	+ 34 59		19.29	
1056	Lacaille 4570	7.0	10 56 31.94	1	2.887	− 26 46		19.29	
1057	B. A. C. 3783	6.3	10 56 36.14	1	2.851	− 31 12		19.29	
1058	χ Leonis	4.3	10 57 47.65	11	3.122	+ 8 6		19.32	
1059	p^3 Leonis	5.7	10 59 45.66	2	3.088	2 43		19.37	
1060	Weisse X, 1075	8.0	10 59 54.29	1	3.139	10 58		19.37	
1061	Anonymous	9.0	11 0 4.73	1	3.139	+ 10 57		19.37	
1062	Lacaille 4599	6.3	11 0 27.65	3	2.859	− 31 50		19.38	
1063	Anonymous	9.5	11 0 30.00	1	3.138	+ 10 58		19.38	
1064	Anonymous	9.0	11 0 40.40	1	3.138	10 57		19.39	
1065	B. Z. 499, 144	8.6	11 0 52.64	2	3.315	+ 35 28		19.39	
1066	Lacaille 4609	6.0	11 1 30.75	1	2.883	− 29 13		19.41	
1067	ψ Ursæ Majoris		11 1 46.73	1	3.411	+ 45 15		19.41	
1068	Lacaille 4614		11 1 54.47	1	2.886	− 28 59		19.41	
1069	B. Z. 499, 147	7.9	11 2 31.55	2	3.314	+ 36 6		19.43	
1070	Lacaille 4633	6.7	11 3 51.97	3	2.871	− 31 49		19.46	
1071	Anonymous		11 4 10.28	1	3.076	+ 0 40		19.46	
1072	B. Z. 499, 148		11 4 23.35	1	3.303	+ 35 46		19.47	
1073	Lacaille 4642	6.5	11 5 30.43	2	2.877	− 31 41		19.49	
1074	Lacaille 4646	7.2	11 6 22.36	2	2.922	− 25 42		19.51	
1075	p^5 Leonis		11 6 35.53	1	3.076	+ 0 41		19.51	
1076	δ Leonis		11 6 39.48	14	3.192	21 17 24.8	1	19.51	
1077	B. A. C. 3837	6.6	11 6 45.34	2	3.120	+ 8 50		19.52	
1078	Lacaille 4655		11 7 46.05	2	2.929	− 25 21		19.54	
1079	Lacaille 4665	6.4	11 8 19.14	3	2.888	31 33		19.55	
1080	Weisse XI, 137	8.0	11 9 26.09	1	3.057	2 53		19.57	
1081	φ Leonis	4.5	11 9 32.66	2	3.057	− 2 53		19.57	
1082	B. Z. 358, 8	8.0	11 10 23.31	1	3.282	+ 36 12		19.59	
1083	Lacaille 4687	7.1	11 10 52.46	2	2.889	− 32 46		19.60	
1084	B. Z. 358, 9	7.0	11 11 11.69	1	3.279	+ 36 15		19.60	
1085	δ Crateris	3.2	11 12 20.63	11	3.003	− 14 1		19.62	
1086	Lacaille 4709	7.5	11 13 42.82	2	2.909	− 31 21		19.65	
1087	σ Leonis		11 13 55.11	1	3.104	+ 6 48		19.65	
1088	Lacaille 4713	7.0	11 14 23.58	2	2.888	− 34 45		19.66	
1089	Weisse XI, 234	7.8	11 14 25.75	1	3.109	+ 8 0		19.66	
1090	Weisse XI, 258	8.3	11 15 50.91	1	3.094	4 54		19.68	
1091	Weisse XI, 261	9.2	11 16 1.30	2	3.089	+ 3 56		19.69	
1092	Lacaille 4725	8.2	11 16 12.86	2	2.936	− 28 8		19.69	
1093	ν Leonis		11 16 37.53	2	3.122	+ 11 18		19.70	
1094	Weisse XI, 284	7.9	11 17 33.61	3	3.084	+ 2 52		19.71	
1095	Lacaille 4735	7.3	11 17 42.39	3	2.909	− 33 31		19.71	
1096	B. Z. 496, 49		11 19 6.60	1	3.164	+ 21 17		19.74	
1097	83 Leonis		11 19 39.96	1	3.087	3 47		19.75	
1098	Gr. C. 954		11 19 40.93	1	3.087	+ 3 46		19.75	
1099	Lacaille 4749	6.7	11 20 41.92	2	2.965	− 25 5 30.8	1	19.76	
1100	τ Leonis	5.1	11 20 44.24	5	+ 3.086	+ 3 38		− 19.76	

Number.	Name.		Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1101		Weisse XI, 349 . . .	7.6	11 20 45.20	3	+ 3.086	+ 3 36		— 19.76	
1102		Lacaille 4753	6.0	11 21 8.48	2	2.816	— 34 33		19.77	
1103		Anonymous	8.2	11 22 47.31	1	3.087	+ 3 54		19.79	
1104	58	Ursæ Majoris	7.0	11 22 55.83	1	3.279	43 56		19.79	
1105	λ	Draconis	3.8	11 23 2.84	3	3.679	+ 70 6		19.80	
		S. P.					11.1	2		
1106	ε	Leonis	4.5	11 23 9.71	2	3.064	— 2 14		19.80	
1107		Lacaille 4761	6.3	11 23 23.56	1	2.973	25 1 37.6	1	19.80	
1108		Lacaille 4766	6.6	11 23 55.12	2	2.909	— 38 28		19.81	
1109		B. A. C. 3917	7.3	11 24 11.40	3	3.086	+ 3 50		19.81	
1110		B. A. C. 3921	6.0	11 25 19.97	1	2.962	— 28 30		19.83	
1111		B. A. C. 3922	6.0	11 25 20.42	1	2.962	— 28 30		19.83	
1112		Weisse XI, 429 . . .	8.5	11 25 26.71	4	3.079	+ 2 7		19.83	
1113		Weisse XI, 438 . . .	8.2	11 25 51.32	3	3.079	+ 2 4		19.83	
1114		B. A. C. 3928	4.4	11 26 7.36	2	2.953	— 31 5		19.84	
1115		Weisse XI, 446 . . .	8.0	11 26 18.48	2	3.102	+ 8 45		19.84	
1116		B. A. C. 3937	6.8	11 28 55.57	1	3.170	28 33		19.87	
1117		(* 115) W.	9.5	11 29 37.40	2	3.076	+ 1 28		19.88	
1118		Lacaille 4802	6.5	11 29 40.92	2	2.947	— 35 20		19.88	
1119	υ	Leonis	4.8	11 29 46.88	10	3.072	— 0 3		19.88	
1120		B. Z. 526, 102	8.0	11 29 52.14	1	3.167	+ 28 33		19.88	
1121	59	Ursæ Majoris		11 30 52.26	1	3.238	+ 44 24		19.89	
1122		Lacaille 4825	7.0	11 31 54.16	1	2.937	— 39 32		19.90	
1123		Weisse XI, 553 . . .	9.3	11 32 5.96	1	3.077	+ 1 45		19.91	
1124		Lacaille 4833	7.6	11 32 48.58	2	2.964	— 34 13		19.91	
1125		B. A. C. 3962	7.3	11 33 13.41	6	3.077	+ 1 44		19.92	
1126		Anonymous	9.2	11 34 17.08	1	3.077	+ 1 44		19.93	
1127		Lacaille 4849	7.2	11 34 25.72	2	2.968	— 34 49		19.93	
1128		Anonymous	9.0	11 34 31.16	1	3.077	+ 1 44		19.93	
1129		B. A. C. 3969	5.4	11 34 44.98	2	2.981	— 31 43		19.93	
1130		Weisse XI, 624 . . .	7.7	11 36 9.75	6	3.074	+ 0 58		19.95	
1131		Lacaille 4867	7.2	11 36 58.22	2	2.998	— 28 59		19.95	
1132		Weisse XI, 652 . . .	9.3	11 37 43.20	1	3.090	+ 7 50		19.96	
1133		Weisse XI, 662 . . .	7.4	11 38 12.38	3	3.089	7 49		19.97	
1134		B. Z. 359, 32	7.0	11 38 14.43	1	3.166	+ 36 40		19.97	
1135		Lacaille 4877	6.8	11 38 27.58	2	2.968	— 39 44		19.97	
1136	ν	Virginis		11 38 39.75	1	3.088	+ 7 19		19.97	
1137		B. A. C. 3988	4.8	11 39 50.68	2	2.974	— 39 44		19.98	
1138		Lacaille 4890	7.8	11 40 16.06	1	3.007	— 29 29		19.98	2.5s. less than Lacaille.
1139		Lalande 22308	8.0	11 41 46.18	1	3.101	+ 15 17		19.99	
1140		B. Z. 456, 121	7.3	11 41 48.28	1	3.104	16 56		19.99	
1141	β	Leonis		11 41 54.98	19	3.101	+ 15 21		19.99	
1142		B. A. C. 4003	6.2	11 43 33.12	1	3.024	— 26 30		20.00	
1143		Lacaille 4906	6.4	11 43 40.24	2	3.012	32 22		20.00	
1144		B. A. C. 4006	6.5	11 43 52.82	2	3.065	4 33		20.01	
1145		Lacaille 4909	7.0	11 44 0.62	1	3.026	— 26 18		20.01	
1146		Carrington 1762 . . .	8.3	11 44 34.30	2	4.788	+ 87 0		20.01	
1147		B. A. C. 4015	5.0	11 45 50.72	1	3.018	— 33 8		20.02	
1148	γ	Ursæ Majoris		11 46 27.05	1	3.182	+ 54 28		20.02	
		S. P.					18.3	3		
1149		Anonymous	9.5	11 46 54.60	2	3.073	+ 1 6		20.02	
1150		B. A. C. 4025	7.3	11 47 40.70	1	3.071	— 0 40		20.03	
1151		Lacaille 4939	7.0	11 48 23.84	1	3.042	24 4		20.03	
1152		B. A. C. 4034	5.8	11 48 49.15	1	3.019	38 55		20.03	
1153		B. A. C. 4042	6.0	11 51 46.27	2	3.049	25 8		20.04	
1154		Weisse XI, 895 . . .	7.5	11 52 24.23	3	3.071	— 1 8		20.04	
1155	b	Virginis		11 52 46.64	2	3.075	+ 4 26		20.05	
1156		Weisse XI, 921 . . .	8.1	11 53 51.02	3	3.077	+ 8 42		20.05	
1157		Lacaille 4976	7.0	11 54 16.10	2	3.050	— 33 17		20.05	
1158		Lacaille 4979	6.6	11 54 38.91	2	3.051	33 53		20.05	2.4s. less than Lacaille.
1159	67	Ursæ Majoris		11 54 59.59	1	3.100	+ 43 49		20.05	
1160		Lacaille 4993	6.0	11 56 30.59	1	3.056	— 38 15		20.05	8s. less than Lacaille.
1161		B. A. C. 4070		11 57 37.37	1	3.287	+ 86 23		20.05	
1162		Weisse XI, 980 . . .	8.0	11 57 45.53	3	3.074	9 30		20.05	
1163	ο	Virginis	4.4	11 58 4.61	9	3.074	+ 9 31		20.06	
1164		Lacaille 5015		11 58 54		3.068	— 32 10 27.1	2	20.06	
1165		Weisse XI, 1011 . . .	7.4	12 0 1.46	2	+ 3.072	+ 0 8		— 20.06	

Number.		Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1166		Weisse XI, 1030	7.8	12 1 1.98	2	+ 3.072	— 3 30		— 20.06	
1167		B. A. C. 4088	6.5	12 1 7.19	1	3.076	33 54		20.06	
1168		Weisse XI, 1033	8.0	12 1 17.57	1	3.073	3 33		20.06	
1169	ε	Corvi		12 2 55.78	4	3.079	21 50		20.05	
1170		B. A. C. 4098	6.0	12 3 18.66	1	3.086	— 37 5		20.05	
1171		Weisse XII, 49	8.4	12 4 22.12	3	3.068	+ 8 12		20.05	
1172	4	Draconis	4.7	12 5 35.50	4	2.913	+ 78 23 40.2	1	20.05	
		S. P.					39.1	4		
1173		Lacaille 5066	6.2	12 6 21.14	3	3.096	— 33 1		20.05	
1174		Lacaille 5067		12 6 26		3.091	— 26 32 33.2	1	20.05	
1175	δ	Ursæ Majoris	4.5	12 8 28.82	1	2.993	+ 57 48		20.04	
		S. P.					37.7	2		
1176		Weisse XII, 144	7.9	12 10 17.94	3	3.064	+ 7 23		20.04	
1177		Lacaille 5088	6.4	12 10 29.22	3	3.115	— 35 19		20.03	
1178		Lacaille 5097	6.5	12 12 13.82	1	3.116	— 31 49		20.03	
1179		B. A. C. 4150	6.0	12 12 42.35	1	1.550	+ 87 13		20.02	
1180	η	Virginis	4.0	12 12 44.66	8	3.072	+ 0 7		20.02	
1181		Lacaille 5102	7.3	12 12 46.22	2	3.128	— 37 1		20.02	
1182		Weisse XII, 193	8.0	12 12 47.24	1	3.063	+ 6 27		20.02	
1183	c	Virginis		12 13 14.30	1	3.066	+ 4 6		20.02	
1184		Lacaille 5109	6.5	12 13 43.43	1	+ 3.143	— 41 47		20.02	
1185		B. A. C. 4165 S. P.		12 14 19.66	2	— 0.068	+ 88 29		20.02	
1186		Lacaille 5117		12 14 52.72	1	+ 3.139	— 37 41		20.01	15s. greater than Lacaille.
1187		Lacaille 5125	7.2	12 15 43.26	1	3.113	24 5 43.4	2	20.01	
1188		Lacaille 5126	7.0	12 15 52.74	2	3.141	— 36 43		20.01	
1189		Weisse XII, 252	9.5	12 15 57.14	1	3.060	+ 7 37		20.01	
1190	6	Corvi	5.8	12 16 4.27	1	3.114	— 24 43 46.0	2	20.01	
1191		B. A. C. 4175	5.5	12 16 22.06	1	3.147	— 38 8		20.00	
1192		Weisse XII, 261	8.8	12 16 36.11	3	3.050	+ 12 41 50.9	1	20.00	
1193		Lalande 23219	9.0	12 17 33.65	1	3.081	— 4 52		20.00	
1194		Lacaille 5144	5.5	12 17 58.99	1	3.125	26 58		19.99	
1195	κ²	Centauri	5.8	12 17 59.77	2	3.144	34 25		19.99	
1196		B. A. C. 4192	6.0	12 19 29.51	2	3.143	32 3		19.98	
1197		Lalande 23270	8.3	12 19 35.65	1	3.081	4 49		19.98	
1198		Lacaille 5159		12 20 6.23	1	3.134	— 27 56		19.98	
1199	73	Ursæ Majoris		12 20 54.66	2	2.888	+ 56 29		19.97	
1200		B. A. C. 4202	5.6	12 20 56.53	2	3.168	— 38 16		19.97	
1201		Weisse XII, 345	9.1	12 21 11.90	3	3.043	+ 13 7		19.97	
1202		Lacaille 5176	7.6	12 22 40.23	3	3.156	— 31 17		19.96	
1203		Lacaille 5188		12 23 44.91	1	3.155	30 52		19.95	
1204		O. Arg. S. 12219	6.5	12 24 13.93	1	3.154	30 12		19.94	
1205		Weisse XII, 402	7.2	12 24 26.90	4	3.083	4 17		19.94	
1206		Lacaille 5189	6.5	12 24 29.08	2	3.193	40 17		19.94	
1207		Lacaille 5193	6.7	12 25 10.32	1	3.162	31 42		19.93	
1208	q	Virginis	6.4	12 26 33.37	4	3.096	8 41		19.92	
1209	β	Corvi		12 27 2.38	6	3.137	— 22 37		19.92	
1210	κ	Draconis	3.6	12 27 29.08	3	2.619	+ 70 33 38.0	1	19.91	
		S. P.					36.5	2		
1211		Weisse XII, 461	8.9	12 28 3.04	3	3.032	+ 13 43		19.91	
1212		B. A. C. 4243	5.5	12 28 14.32	2	3.211	— 40 15		19.90	
1213		B. Z. 409, 45	8.0	12 30 11.15	1	2.955	+ 33 48		19.88	
1214		B. A. C. 4253	5.3	12 30 17.34	1	3.159	— 26 21 51.4	2	19.88	
1215		Weisse XII, 497	8.0	12 30 18.70	2	3.029	+ 13 45		19.88	
1216		Lacaille 5226	6.7	12 30 53.27	2	3.212	— 38 2		19.87	
1217		Weisse XII, 519	7.8	12 31 32.26	2	3.024	+ 14 35		19.87	
1218		Anonymous	8.8	12 31 48.59	2	3.024	14 34		19.86	
1219		Weisse XII, 526	9.2	12 31 57.92	2	3.024	+ 14 33		19.86	
1220		Lacaille 5230	7.8	12 31 58.16	1	3.174	— 28 45 59.2	1	19.86	
1221	χ	Virginis	4.8	12 32 1.38	5	3.096	7 13		19.86	
1222		B. A. C. 4262		12 32 19		3.225	39 12 59.2	1	19.86	
1223		Lacaille 5232	8.0	12 32 21.81	1	3.176	28 56		19.86	
1224		Lacaille 5239	8.5	12 33 25.87	1	3.171	26 57		19.84	
1225		Lacaille 5238	7.0	12 33 31.49	1	3.256	43 20		19.84	
1226	γ¹	Virginis		12 34 34		3.074	0 40 49.1	1	19.83	
1227		Lacaille 5256	7.4	12 35 48.14	1	3.166	24 13		19.81	
1228		Lacaille 5261	7.0	12 36 26.47	2	3.216	34 20		19.80	
1229		B. A. C. 4278		12 36 33		3.183	— 27 33 18.2	2	19.80	
1230		Anonymous	9.0	12 37 24.61	1	+ 3.017	+ 14 14		+ 19.79	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1231		B. A. C. 4282		12 37 50		+ 2.853	+ 44 52 10.5	1	— 19.78	
1232		Weisse XII, 632	8.8	12 37 53.43	3	3.016	14 16		19.78	
1233		Weisse XII, 646	8.0	12 38 24.82	1	3.016	14 11		19.77	
1234		Weisse XII, 652	7.8	12 38 53.92	5	3.014	14 21		19.77	
1235		Rumker 4124	7.2	12 40 2.94	3	3.012	14 23		19.75	
1236		Anonymous		12 40 3.74	1	3.012	+ 14 28		19.75	
1237		Lacaille 5282	6.8	12 40 26.94	1	3.178	— 24 14 56.9	1	19.74	
1238		Lacaille 5283	6.5	12 40 27.51	1	3.177	24 6		19.74	
1239		Lacaille 5281	6.7	12 40 31.43	1	3.299	43 58		19.74	
1240		B. A. C. 4297	5.8	12 40 58.96	2	3.192	— 26 50		19.74	
1241	28	Comæ	6.3	12 41 13.51	3	3.011	+ 14 19		19.73	
1242	29	Comæ	6.0	12 41 53.24	4	3.007	14 53 15.9		19.72	
1243		Weisse XII, 736	8.5	12 43 33.30	1	3.072	+ 0 1		19.69	
1244		B. A. C. 4313.	6.5	12 44 15.14	2	3.279	— 38 55		19.68	
1245		Lacaille 5304	6.4	12 44 29.44	1	3.198	— 25 58 36.4	2	19.68	
1246		Weisse XII, 757	8.3	12 44 41.45	1	3.068	+ 0 51		19.68	
1247		Lacaille 5315		12 45 44.24	1	3.220	— 29 15		19.66	
1248	38	Virginis		12 46 1		3.085	2 47 29.8	1	19.65	
1249	ψ	Virginis	4.8	12 47 4.54	4	3.114	8 47		19.63	
1250		B. A. C. 4331	5.5	12 47 11.54	1	3.330	43 23		19.63	
1251		Weisse XII, 803	8.8	12 47 33.97	2	3.119	9 41		19.63	
1252		Lacaille 5326		12 47 58.21	1	3.228	— 29 19		19.62	
1253		B. A C. 4339 S. P.		12 48 0.35	1	0.344	+ 84 10 44.1	1	19.62	
1254		B. A. C. 4342 S. P.		12 48 8.31	1	0.339	+ 84 10 25.6	3	19.62	
1255		Weisse XII, 819		12 48 29.28	1	3.077	— 0 58		19.61	
1256		Weisse XII, 835	6.5	12 49 15.72	1	3.073	— 0 12		19.59	
1257		B. A. C. 4345		12 49 27.09	2	2.839	+ 39 4 15.7	2	19.59	
1258	α	Canum Venaticorum	3.0	12 49 28.40	7	2.839	+ 39 4 30.5	4	19.59	
1259		Lacaille 5346		12 51 7.33	1	3.306	— 38 20		19.56	
1260		Lacaille 5347	7.0	12 51 16.22	1	3.348	42 56		19.56	
1261		Lacaille 5348	7.5	12 51 21.76	2	3.235	29 14		19.55	
1262		Weisse XII, 878	8.2	12 51 48.51	4	3.079	— 1 19		19.55	
1263		B. Z. 408,84	7.0	12 53 44.25	1	2.874	+ 32 22		19.51	
1264		Lacaille 5364		12 54 0		3.211	— 23 54 37.0	1	19.50	
1265		Weisse XII, 918	8.7	12 54 4.66	3	3.129	— 10 24		19.50	
1266	78	Ursæ Majoris		12 54 42.80	3	2.583	+ 57 7		19.49	
1267		Lacaille 5368	6.5	12 54 49.31	1	3.244	— 28 31		19.49	
1268		Lacaille 5374	7.7	12 55 46.36	2	3.250	28 55		19.46	
1269		Lacaille 5382	7.2	12 56 47.68	1	3.244	27 39 4.7	1	19.44	
1270		Lacaille 5387	7.7	12 57 35.46	1	3.247	27 45 53.5	1	19.43	
1271		B. A. C. 4378	5.2	12 58 40.09	2	3.364	40 50		19.40	
1272		Lacaille 5405	8.3	12 59 58.78	1	3.269	29 40		19.37	
1273	θ	(Comp.) Virginis	11.0	13 2 42.18	1	3.102	4 47		19.31	
1274	θ	Virginis		13 2 42.27	13	3.102	4 47 26.5	2	19.31	
1275		B. A. C. 4405	5.0	13 3 11.23	1	3.394	41 29		19.30	
1276		Lacaille 5428	6.3	13 4 2.83	1	3.250	25 48		19.28	
1277	53	Virginis		13 4 36.82	1	3.175	15 26		19.26	
1278		Lacaille 5454		13 6 53		3.240	23 32 28.6	1	19.21	
1279		Σ Cat. Gen. 1510, (1st star)	7.5	13 7 36.26	2	3.145	10 37		19.19	
1280		Σ Cat. Gen. 1510, (2d star)	8.3	13 7 39.56	2	3.145	10 37		19.19	
1281	58	Virginis	6.5	13 10 7.29	2	3.142	9 49		19.12	
1282	61	Virginis		13 11 5.02	1	3.201	17 32		19.10	Probably 1s. too small.
1283		Lacaille 5502	7.0	13 13 58.12	2	3.405	38 7		19.02	2.2s. greater than Lacaille.
1284		Weisse XIII, 225	8.7	13 14 15.81	1	3.097	3 22		19.01	
1285		Lacaille 5510		13 14 48.75	1	3.273	25 6		19.00	
1286		Weisse XIII, 235	8.2	13 14 56.61	1	3.102	— 3 56		18.99	
1287		Weisse XIII, 268	8.0	13 17 11.12	1	3.069	+ 0 25		18.93	
1288	α	Virginis		13 17 49.31	34	3.154	— 10 25 45.2	4	18.91	
1289	ζ	Ursæ Majoris, S. P.		13 18 16		2.417	+ 55 39 17.4	1	18.90	
1290	g	Ursæ Majoris		13 19 36		2.404	55 43 5.4	1	18.86	
1291		Weisse XIII, 312	9.0	13 19 52.27	1	3.056	+ 1 58		18.85	
1292		B. A. C. 4496		13 21 5.58	1	3.073	— 0 6		18.81	
1293		B. Z. 464, 125	9.0	13 21 52.14	1	2.824	+ 27 56		18.79	
1294		Weisse XIII, 365		13 22 58.90	4	3.006	+ 7 54		18.76	
1295		Lacaille 5573	6.3	13 23 46.98	2	+ 3.320	— 27 28		— 18.73	

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				h. m. s.		″	° ′ ″		″	
1296		Weisse XIII, 392	9.0	13 24 24.21	1	+ 2.998	+ 8 47		− 18.71	
1297	l^2	Virginis		13 24 41.37	1	3.119	− 5 32		18.70	
1298		Lacaille 5580	6.0	13 24 48.64	2	3.329	27 58		18.70	
1299		Lacaille 5582	8.8	13 25 9.26	1	3.307	− 25 52		18.69	
1300		Weisse XIII, 413	7.6	13 25 15.98	2	3.012	+ 7 4		18.68	
1301	75	Virginis		13 25 23		3.199	− 14 38 30.0	1	18.68	
1302	h	Virginis	4.9	13 25 35.83	2	3.153	− 9 27		18.67	
1303		B. A. C. 4527	5.4	13 25 47.88	1	0.467	+ 79 22		18.67	
1304	ζ	Virginis		13 27 33.72	15	+ 3.071	0 7 16.5	2	18.61	
1305		Anonymous	8.5	13 28 40.57	1	− 0.047	+ 80 50		18.57	
1306		B. A. C. 4541		13 29 3		+ 3.317	− 25 46 44.9	1	18.56	
1307		Lacaille 5613	7.2	13 29 33.16	2	3.420	34 19		18.54	
1308		Lacaille 5615	7.2	13 29 46.93	2	3.421	34 20		18.54	
1309		B. A. C. 4547	7.0	13 30 32.88	3	3.094	2 31		18.51	
1310		B. A. C. 4548	6.0	13 30 50.58	1	3.356	28 51		18.50	
1311		Lacaille 5621	6.0	13 30 51.80	1	3.399	− 32 24		18.50	
1312		Anonymous	8.6	13 32 3.79	3	0.807	+ 77 0		18.46	
1313		Lacaille 5635	7.0	13 32 19.92	1	3.337	− 26 52		18.45	
1314		Lacaille 5636	7.0	13 32 28.90	2	3.421	− 33 39		18.45	
1315		Anonymous	7.2	13 32 53.39	3	0.736	+ 77 17		18.43	
1316		Lacaille 5639		13 32 59.63	3	3.424	− 33 44		18.43	
1317		Lacaille 5646		13 33 40		3.329	25 44 1.2	1	18.40	
1318		Lacaille 5645		13 33 44.83	1	3.415	32 53		18.40	
1319	m	Virginis	5.5	13 34 15.99	1	3.147	7 59 42.1	1	18.38	
1320		Lacaille 5649		13 34 18.97	2	3.423	− 33 16		18.38	
1321	o	Virginis		13 36 1.58	1	3.032	+ 4 15		18.32	
1322		Lacaille 5665	6.4	13 37 21.88	2	3.461	− 35 13		18.27	
1323		B. Z. 462, 49	8.8	13 37 38.59	2	2.803	+ 25 59		18.26	
1324	i	Centauri	5.0	13 37 44.30	2	3.422	− 32 20		18.26	
1325		B. A. C. 4581	5.9	13 37 48.52	2	3.335	25 25		18.26	
1326		Weisse XIII, 651	7.5	13 38 10.01	1	3.187	11 41		18.24	
1327	86	Virginis	5.8	13 38 28.92	1	3.188	11 43 24.7	1	18.23	
1328		Anonymous		13 40 1.01	1	3.506	− 37 33		18.18	
1329	3	Bootis	5.0	13 40 13.24	1	2.791	+ 26 24		18.17	
1330		Lacaille 5680	6.6	13 40 29.52	3	3.491	− 36 26		18.16	
1331		B. Z. 414, 16	9.0	13 40 57.50	1	2.687	+ 34 1		18.14	
1332	9	Centauri	4.8	13 41 20.60	2	3.454	− 33 45		18.13	
1333		Anonymous	9.8	13 41 59.91	1	0.279	+ 78 21		18.10	
1334	η	Ursæ Majoris	2.1	13 42 1.10	1	2.386	50 0 47.6	4	18.10	
1335		B. A. C. 4614		13 42 6.41	1	0.184	+ 78 43		18.10	
1336	89	Virginis		13 42 16.21	4	3.253	− 17 26		18.09	
1337		B. Z. 413, 17	5.9	13 42 19.57	2	2.713	+ 31 53		18.09	
1338		Weisse XIII, 731	7.5	13 42 51.84	1	3.160	− 12 25		18.07	
1339		B. Z. 414, 20		13 43 7.45	1	2.673	+ 34 26		18.06	
1340		B. A. C. 4620	6.0	13 43 25.81	3	3.492	− 35 44		18.05	
1341		Lalande 25494	7.5	13 43 44.06	1	2.836	+ 21 57		18.04	
1342	κ	Centauri, (1st star) . .	6.0	13 43 45.40	2	3.442	− 32 18		18.04	
1343	κ	Centauri, (2d star) . .	7.0	13 43 46.06	2	3.442	− 32 18		18.03	
1344		Piazzi XIII, 220	7.0	13 43 46.96	1	2.836	+ 21 58		18.03	
1345		Anonymous	8.5	13 44 1.05	1	3.529	− 37 55		18.03	
1346		Rumker 4483	8.8	13 44 4.07	1	2.944	+ 12 16		18.02	
1347		Lacaille 5724		13 45 16.16	2	3.528	− 37 34		17.98	
1348		B. A. C. 4631	6.0	13 45 22.46	2	3.487	− 34 58		17.97	
1349		Anonymous	9.0	13 45 37.28	1	2.807	+ 24 2		17.96	
1350		Lacaille 5729	5.7	13 45 44.77	2	3.483	− 34 37		17.96	
1351		B. Z. 412, 139	8.0	13 46 17.59	1	2.842	+ 21 1		17.94	
1352		Rumker 4501	7.5	13 46 26.28	2	2.933	13 2		17.93	
1353		Weisse XIII, 785	8.5	13 46 30.28	2	2.968	+ 9 49		17.93	
1354		Lacaille 5743	6.5	13 46 30.42	2	3.475	− 33 54		17.93	
1355		Anonymous	9.2	13 46 34.41	1	0.290	+ 77 50		17.93	
1356		Weisse XIII, 794	8.8	13 46 53.96	2	2.929	13 22		17.91	
1357	i	Draconis		13 47 20.63	2	1.753	+ 65 25		17.90	
1358		Lacaille 5754	7.0	13 47 53.02	1	3.420	− 29 53		17.87	
1359	η	Bootis		13 48 1.10	11	2.862	+ 19 6 3.2	6	17.87	
1360		Lacaille 5758	6.5	13 48 23.80	4	+ 3.541	− 37 37		− 17.85	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1361		Anonymous	7.0	13 48 30.96	1	+ 3.541	− 37 35		− 17.85	
1362		Rumker 4517	6.4	13 49 5.12	2	2.911	+ 14 44		17.83	
1363		B. Z. 462, 66		13 49 28.42	1	2.783	+ 25 13		17.81	
1364		Lacaille 5769	7.5	13 49 41.50	2	3.544	− 37 28		17.80	
1365		B. Z. 462, 67	7.3	13 49 43.90	1	2.763	+ 26 36		17.80	
1366		Lacaille 5773		13 50 9		3.364	− 25 18 47.5	1	17.78	
1367		Lacaille 5774	6.7	13 50 9.56	2	3.415	29 4		17.78	
1368		Lacaille 5779	6.5	13 52 31.25	2	3.670	− 43 30		17.69	
1369		Σ Cat. Gen. 1570, (1st star)	8.5	13 52 39.10	1	2.757	+ 26 30		17.68	
1370		Σ Cat. Gen. 1570, (2d star)	8.6	13 52 39.42	2	2.757	+ 26 30		17.68	
1371		Lacaille 5785	6.0	13 52 41.73	1	3.374	− 25 35		17.68	
1372		B. A. C. 4667	5.5	13 52 52.68	2	3.594	− 39 32		17.67	
1373		Anonymous	8.5	13 53 50.34	1	0.320	+ 76 58		17.63	
1374		B. A. C. 4671	5.7	13 54 25.48	1	3.395	− 26 45		17.61	
1375		Anonymous		13 54 26.53	1	3.047	+ 2 12		17.61	
1376		Anonymous	8.2	13 54 26.94	2	0.280	77 5		17.61	
1377		Rumker 4551	7.0	13 54 30.89	1	2.805	22 39		17.60	
1378	τ	Virginis		13 54 31.42	10	3.047	2 13		17.60	
1379		Anonymous	9.0	13 54 39.67	1	0.600	75 27		17.60	
1380	11	Bootis		13 54 49		2.730	28 3 50.4	1	17.59	
1381		Anonymous	8.8	13 55 27.06	1	0.591	+ 75 25		17.56	
1382		Anonymous		13 55 38.46	1	3.568	− 37 31		17.56	
1383		Lacaille 5800	7.1	13 56 20.32	2	3.526	34 58		17.53	
1384		Anonymous		13 56 32.38	1	3.573	37 36		17.52	
1385		Lacaille 5812	7.5	13 57 34.21	1	3.567	37 3		17.47	
1386		Lacaille 5819	6.0	13 58 14.39	3	3.520	34 13 39.1	2	17.44	
1387	π	Hydræ		13 58 24.31	1	3.394	26 0		17.44	
1388	θ	Centauri		13 58 28		3.568	35 40 46.4	1	17.43	
1389		Lacaille 5822	6.6	13 58 50.61	3	3.533	34 49		17.42	
1390	94	Virginis		13 58 53		3.168	8 13 17.2	1	17.42	
1391		Weisse XIII, 1035	6.8	13 59 7.84	2	3.232	13 32		17.41	
1392		Lacaille 5824	6.4	13 59 31.01	2	3.526	34 16 50.6	1	17.39	
1393		Anonymous	8.3	14 0 20.82	1	3.587	27 32		17.35	
1394	a	Draconis		14 0 35.97	7	1.629	+ 65 2 44.8	5	17.34	
		S. P.					42.6	2		
1395		Anonymous	9.3	14 1 56.38	1	1.529	+ 66 19		17.28	
1396		Lacaille 5837	6.5	14 2 6.08	1	3.463	− 29 57		17.28	
1397		Lacaille 5838	7.0	14 2 17.04	2	3.456	29 25		17.27	
1398		Lacaille 5839	6.1	14 2 40.99	4	3.489	31 24 43.9	1	17.25	
1399		Lacaille 5842	7.5	14 3 13.44	2	3.453	29 7		17.23	
1400		Lacaille 5843	6.8	14 3 17.56	3	3.492	31 30 23.3	1	17.22	
1401		O. Arg. S. 13444	8.3	14 3 34.70	2	3.273	− 16 21		17.21	
1402	d	Bootis		14 4 0.79	2	2.740	+ 25 45		17.19	
1403		Lacaille 5855		14 4 29.76	2	3.375	− 23 42		17.17	
1404	50	Hydræ		14 4 45.32	1	3.419	26 36		17.16	
1405		B. A. C. 4711		14 5 13.60	1	3.410	25 57		17.14	
1406	κ	Virginis	4.8	14 5 25.87	4	3.190	9 37		17.13	
1407		Weisse XIV, 83	8.6	14 6 3.66	2	3.174	8 20		17.10	
1408		Lacaille 5860	6.0	14 6 4.79	3	3.684	41 11		17.10	
1409		B. A. C. 4719	6.3	14 6 55.40	1	3.456	− 28 37		17.06	
1410		Lacaille 5872		14 8 1.66	1	3.525	32 35 17.1	1	17.01	
1411		Lacaille 5873	6.5	14 8 5.66	3	3.505	31 24		17.00	
1412		Lacaille 5878	6.7	14 9 9.66	2	3.714	− 41 57		16.95	5.5s. greater than Lacaille.
1413	a	Bootis		14 9 16.61	47	+ 2.813	+ 19 54 40.8	9	16.95	
1414	4	Ursæ Minoris, S. P.		14 9 30.		− 0.355	+ 78 12 18.4	3	16.94	
1415		Lacaille 5880		14 9 32.91	1	+ 3.426	− 26 18		16.94	
1416		Lacaille 5883		14 10 7.37	1	3.531	32 34 10.6	1	16.91	
1417		Lacaille 5886	5.6	14 10 56.65	2	3.604	36 21		16.87	
1418	λ	Virginis	5.7	14 11 32.41	3	3.236	12 43		16.84	
1419	ψ	Centauri	5.0	14 12 3.21	3	3.626	37 14		16.82	
1420		Lacaille 5898	7.0	14 12 15.67	2	3.565	34 2		16.81	
1421		Weisse XIV, 221	9.4	14 12 53.82	2	3.118	3 37		16.78	
1422		Lacaille 5906	7.6	14 13 37.61	2	3.442	26 40		16.74	
1423		B. A. C. 4757	6.0	14 13 56.91	4	3.576	34 9		16.73	
1424		Weisse XIV, 252	9.1	14 14 49.72	2	3.193	9 15		16.68	
1425		Lacaille 5922		14 15 44.86	1	+ 3.487	− 29 3		− 16.64	

Number.	Name.		Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession	Remarks.
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1426	2	Libræ		14 15 53.87	3	+ 3.218	— 11 4		— 16.63	
1427		Lacaille 5923		14 15 55.55	1	3.547	32 27		16.63	
1428		Lacaille 5926		14 16 26.20	1	3.488	29 1		16.61	7s. greater than Lacaille.
1429		Lacaille 5925	6.8	14 16 29.40	1	3.633	36 48		16.60	
1430		B. A. C. 4767	6.0	14 16 49.84	2	3.409	24 10 4.8	1	16.59	
1431		Lacaille 5932	6.9	14 17 11.46	3	3.549	— 32 20		16.57	
1432		Weisse XIV, 314	8.8	14 17 35.26	1	3.030	+ 3 10		16.55	
1433		Lacaille 5941	7.2	14 18 6.86	2	3.557	— 32 37		16.52	
1434		(* 112) W.	9.0	14 18 41.10	1	+ 3.030	+ 3 10		16.49	
1435		Schwerd. 835	8.0	14 18 56.22	2	— 1.241	+ 79 59		16.48	
1436		Lacaille 5945	7.0	14 19 3.67	2	+ 3.602	— 34 48		16.48	
1437	52	Hydræ		14 19 59		3.495	— 28 51 36.1	1	16.43	
1438	θ	Bootis		14 20 25.77	3	2.070	+ 52 30		16.41	
1439		Lacaille 5953	6.5	14 20 58.68	1	3.491	— 28 29		16.38	2.5s. greater than Lacaille.
1440		Lacaille 5956	6.2	14 21 27.60	2	3.439	25 24		16.35	
1441		Lacaille 5955	6.5	14 21 42.40	2	3.719	39 51		16.34	
1442		Lacaille 5959		14 21 47.39	1	3.432	24 25		16.34	
1443		Lacaille 5962	6.2	14 22 27.55	1	3.720	39 46		16.30	
1444		Lacaille 5967	7.5	14 22 44.32	2	3.599	34 4		16.29	
1445		B. A. C. 4800	7.0	14 22 58.58	2	3.431	24 42		16.28	
1446		Lacaille 5975	6.4	14 23 40.30	2	3.554	31 33 46.1	1	16.24	
1447		O. Arg. S. 13694	7.5	14 23 46.11	2	3.420	23 56		16.24	
1448		Lacaille 5979	7.2	14 24 5.80	2	3.458	26 10		16.22	
1449		Lacaille 5988	6.8	14 25 45.22	2	3.556	— 31 20 15.4	1	16.13	
1450	ρ	Bootis	4.3	14 25 47.72	12	2.595	+ 30 59		16.13	
1451		Lacaille 5991	7.0	14 26 14.19	1	3.626	— 34 50		16.11	
1452		Rumker 4739	8.8	14 26 46.74	2	3.051	+ 1 28		16.08	
1453		Lacaille 6000	7.5	14 27 37.02	2	3.619	— 34 17		16.04	
1454		Lacaille 5999	5.5	14 27 40.13	1	+ 3.722	— 38 58 58.1	1	16.04	
1455	5	Ursæ Minoris	4.0	14 27 52.04	6	— 0.231	+ 76 19 5.4	5	16.03	
		S. P.					4.7	3	.03	
1456		Anonymous	8.0	14 28 21.71	1	+ 3.620	— 34 11		16.00	
1457	σ	Bootis	5.0	14 28 35.10	3	+ 2.599	+ 30 21		15.99	
1458		O. Arg. N. 14695		14 29 28		— 0.278	+ 76 23 13.9	1	15.94	
1459		Lacaille 6015	6.0	14 29 35.69	1	+ 3.711	— 38 11		15.93	
1460		Lacaille 6020	6.5	14 29 53.60	3	3.634	34 40		15.92	
1461		Lacaille 6027	6.5	14 30 49.96	1	3.598	32 46		15.87	
1462	3	Libræ	6.6	14 31 17.42	3	3.444	24 25		15.84	
1463		Lacaille 6040	8.0	14 32 10.64	2	3.523	28 42		15.80	
1464		Lacaille 6042	6.9	14 32 17.70	2	3.468	25 39 1.0	2	15.79	
1465		Lacaille 6038	5.5	14 32 26.04	1	3.661	35 32		15.78	
1466		Lacaille 6047	7.6	14 32 48.06	2	3.472	25 49 29.2	2	15.76	
1467		Anonymous	7.0	14 33 7.17	1	3.593	32 10		15.74	
1468		B. A. C. 4842	5.3	14 33 16.52	2	3.701	— 37 11		15.74	
1469		B. Z. 292, 1	8.5	14 33 25.92	2	2.723	+ 22 47		15.73	
1470		Anonymous	7.5	14 33 33.67	1	3.594	— 32 9		15.72	
1471		Lacaille 6053	8.5	14 33 38.82	2	3.528	28 46		15.72	
1472		Lacaille 6054	6.0	14 33 48.48	3	3.594	32 9		15.71	
1473		Lacaille 6060	6.9	14 34 13.73	2	3.499	27 9		15.68	
1474		B. A. C. 4852	5.0	14 35 6.30	2	3.649	34 34		15.64	
1475	4	Libræ	6.0	14 35 8.52	2	3.452	24 23 52.0	1	15.63	
1476	μ	Virginis	4.5	14 35 41.18	2	3.146	5 2 51.7	2	15.60	
1477		B. A. C. 4857	6.4	14 36 14.60	3	3.439	23 33		15.57	
1478		B. A. C. 4858	5.8	14 36 24.59	2	+ 3.654	— 34 36		15.56	
1479		Lalande F. 2523	7.0	14 37 37.12	2	— 1.868	+ 80 15		15.50	
1480	54	Hydræ	6.0	14 37 54.28	2	+ 3.466	— 24 50 46.4	1	15.48	
1481		Anonymous		14 37 54.65	1	3.466	24 51		15.48	
1482		Lacaille 6086		14 38 19.06	2	3.730	— 37 42		15.46	4s. greater than Lacaille.
1483	ε	Bootis, (1st star)		14 38 52.25	3	2.624	+ 27 40		15.43	
1484	ε	Bootis, (2d star)		14 38 52.37	8	2.624	+ 27 40 59.5	6	15.43	
1485		Lacaille 6099	6.8	14 39 30.14	1	3.510	— 27 6		15.39	
1486	56	Hydræ		14 39 34.99	2	3.481	25 30		15.39	
1487	57	Hydræ	5.8	14 39 46.72	2	3.485	26 8		15.38	
1488		Lacaille 6100	7.0	14 39 54.25	1	3.679	35 14		15.37	
1489		Anonymous		14 40 10.		3.721	37 2 44.3	1	15.35	
1490		B. A. C. 4884		14 40 22.01	1	+ 3.472	— 24 54 21.5	1	— 15.34	

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1491		B. A. C. 4888	5.5	14 41 13.88	2	+ 3.451	− 23 40		− 15.29	
1492	μ	Libræ	4.0	14 41 38.87	1	3.281	13 33 48.0	1	15.27	
1493		Lacaille 6113	7.5	14 41 40.12	1	3.542	28 28		15.27	
1494		Lacaille 6118		14 42 48.16	1	3.530	27 44		15.21	12s. greater than Lacaille.
1495	8	Libræ	6.0	14 42 56.82	2	3.313	15 24 44.3	3	15.20	
1496		Weisse XIV, 793 . . .	7.5	14 43 0.42	1	3.248	11 26		15.19	
1497	α	Libræ		14 43 8.32	15	+ 3.313	− 15 27 26.1	4	15.18	
1498		Lalande F. 2537 . . .	8.0	14 43 14.83	1	− 2.086	+ 80 23		15.18	
1499	11	Libræ	6.0	14 43 45.67	1	+ 3.098	− 1 43		15.15	
1500		B. A. C. 4901	4.8	14 44 4.83	1	3.738	37 13		15.13	
1501		Anonymous		14 45 17.		3.738	37 2 55.6	1	15.06	
1502		Lacaille 6134		14 45 29.25	1	3.539	27 50		15.05	
1503		B. A. C. 4910		14 45 49.		3.455	23 23 55.2	1	15.03	
1504		Lacaille 6135	6.7	14 45 50.52	2	3.672	33 34		15.03	
1505		B. A. C. 4911		14 46 3.72	2	3.539	27 49		15.02	
1506		B. A. C. 4912	5.7	14 46 5.40	3	3.642	32 45		15.01	
1507	12	Libræ	6.1	14 46 12.62	2	3.468	24 4		15.01	
1508		Lacaille 6152		14 47 54.40	1	3.676	34 2		14.91	3.6s. less than Lacaille.
1509		Lacaille 6157	6.4	14 48 48.02	4	3.640	32 18		14.86	
1510		Lacaille 6162		14 48 53.11	1	3.562	28 36		14.85	
1511		Lacaille 6164	7.0	14 49 8.69	4	3.640	32 16		14.84	
1512	ξ^3	Libræ	5.0	14 49 10.56	3	3.244	10 51		14.84	
1513		B A. C. 4923, (1st star) .	7.8	14 49 17.13	1	3.414	20 47		14.83	
1514		B. A. C. 4923, (2d star) .	6.8	14 49 18.13	1	3.414	20 47		14.83	
1515	14	Libræ	7.3	14 49 21.05	1	3.490	24 53		14.83	
1516	59	Hydræ	6.0	14 50 22.57	1	3.535	27 5		14.77	
1517		Lacaille 6178		14 50 24.40	1	+ 3.761	− 37 19		14.76	
1518	β	Ursæ Minoris		14 51 9.35	8	− 0.254	+ 74 43 39.5	13	14.72	
		S. P.					39.5	1		
1519		Lacaille 6186		14 52 21.56	1	+ 3.772	− 37 30		14.65	
1520		Lacaille 6190 . . .	5.8	14 53 19.44	3	3.686	33 48		14.59	
1521		Anonymous		14 53 29.		3.645	31 57 15.8	1	14.58	
1522	60	Hydræ		14 53 46.36	1	3.551	27 30		14.56	
1523		Lacaille 6198 . . .	5.2	14 54 25.83	1	3.650	− 32 5		14.52	
1524	2	Serpentis	5.2	14 54 38.92	3	3.065	+ 0 5		14.51	
1525		Lacaille 6199	7.0	14 54 49.86	2	3.728	− 35 23		14.50	
1526		Lacaille 6204, (1st star) .		14 55 14.86	1	3.549	27 16		14.47	
1527		Lacaille 6204 (2d star) .		14 55 15.20	1	3.549	27 16		14.47	
1528		Anonymous		14 56 8.		3.776	37 8 17.8	1	14.42	
1529		Lacaille 6215		14 56 11.95	1	3.561	27 45		14.42	
1530		Lacaille 6218	6.5	14 56 52.27	1	3.598	29 26		14.37	
1531		Lacaille 6219	5.8	14 57 5.78	2	3.611	− 30 1		14.36	
1532		Σ Cat. Gen. 1683,(1st star)	7.3	14 57 9.51	1	2.973	+ 6 3		14.36	
1533		Σ Cat. Gen. 1683, (2d star)	7.0	14 57 9.69	1	2.973	+ 6 3		14.36	
1534		Lacaille 6221	6.8	14 57 27.02	2	3.744	− 35 43		14.34	
1535		Anonymous		14 58 14.		3.656	− 31 54 19.6		14.29	
1536	ψ	Bootis	4.3	14 58 26.82	6	2.583	+ 27 30		14.27	
1537		Lacaille 6229	7.2	14 58 37.74	2	3.668	− 32 22		14.27	
1538	ν^1	Libræ		14 58 49.45	1	3.337	− 15 43		14.25	
1539		B. A. C. 4972	6.7	14 59 6.69	1	3.484	23 39		14.24	
1540		Lacaille 6237	7.0	14 59 48.74	1	3.785	37 2 49.8	1	14.19	
1541		Lacaille 6239		15 0 12		3.811	37 59 35.7	1	14.17	
1542		B. A. C. 4979 . . .		15 0 40.75	1	3.536	26 4		14.14	14s. less than B. A. C.
1543		Anonymous		15 0 54		3.664	31 57 8.0	1	14.13	
1544		Anonymous		15 1 7.40	1	3.709	33 51		14.11	
1545		B. A. C. 4985		15 2 2		3.533	− 25 47 45.4	1	14.05	
1546	b	Bootis		15 2 21.23	1	2.592	+ 26 40		14.04	
1547		Anonymous		15 2 34		3.792	− 36 58 13.1	1	14.02	
1548		Lacaille 6258		15 3 5.14	2	3.697	33 6		13.99	
1549		Lacaille 6261		15 3 51.80	2	3.796	36 59 28.4	1	13.94	
1550	ι^1	Libræ		15 4 14.81	1	3.408	19 15		13.92	
1551		B. A. C. 4998	6.5	15 5 6.95	1	3.492	23 29		13.86	
1552		Lacaille 6267		15 5 17		3.826	37 57 49.4	1	13.85	
1553	1	Lupi	5.0	15 6 3.22	2	3.655	31 0		13.80	
1554		B. A. C. 5018	7.0	15 6 52.32	2	3.575	27 20		13.75	
1555		B. A. C. 5020		15 7 17.67	1	+ 3.570	− 27 4		− 13.73	

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				h. m. s.		s.	° ′ ″		″	
1556		Lacaille 6293	7.4	15 8 0.44	2	+ 3.834	− 37 55		− 13.68	
1557	3	Serpentis		15 8 13.92	1	2.978	+ 5 28		13.66	
1558		Anonymous		15 8 14		3.809	− 36 58 42.1	1	13.66	
1559	β	Libræ	2.4	15 9 28.66	14	3.225	8 51 49.2	4	13.58	
1560		Anonymous		15 10 29		3.818	37 3 34.8	1	13.52	
1561		Lacaille 6318	7.0	15 11 25.78	1	3.751	34 24		13.46	
1562		Anonymous		15 11 35.33	1	3.212	8 2		13.45	Declination uncertain.
1563		Lacaille 6329	6.7	15 12 29.54	2	3.841	37 42 31.7	1	13.39	
1564		Weisse XV, 210	9.0	15 12 37.05	1	3.310	13 27		13.38	
1565		Anonymous		15 12 54		3.824	37 2 22.2	1	13.36	
1566	28	Libræ	6.0	15 12 57.66	2	3.389	17 39		13.36	
1567		Anonymous		15 13 30		3.828	37 7 37.5	1	13.32	
1568		Lacaille 6342	6.5	15 13 30.18	1	3.689	31 41		13.32	
1569		Anonymous		15 14 40		3.694	31 48 34.4	1	13.25	
1570		Lacaille 6354	7.0	15 14 45.83	1	3.755	34 13		13.24	
1571		Weisse XV, 254	8.7	15 15 5.99	2	3.306	13 5		13.22	
1572		Anonymous		15 15 16		3.831	37 3 50.5	1	13.21	
1573		B. A. C. 5066	6.5	15 15 38.96	2	3.581	26 48		13.18	
1574		Lacaille 6359	7.4	15 16 4.63	2	3.851	− 37 40		13.15	
1575		Anonymous		15 16 34		1.583	+ 55 49 25.5	1	13.12	
1576		Anonymous		15 16 55		1.581	+ 55 49 42.5	1	13.10	
1577		Anonymous		15 16 57		+ 3.834	− 36 59 7.4	1	13.09	
1578	11	Ursæ Minoris	5.5	15 17 14.16		− 0.111	+ 72 19 54.7	2	13.08	
1579	μ	Bootis	4.5	15 19 12.10	2	+ 2.278	+ 37 52		12.95	
1580		Anonymous		15 19 13		3.433	− 32 1 31.2	1	12.94	
1581		Radcliffe 3378	6.0	15 19 13.38	2	2.279	+ 37 50		12.94	
1582		Lacaille 6382		15 19 21		3.846	− 37 8 15.4	1	12.94	
1583		B. A. C. 5091		15 20 18.61	1	0.984	+ 63 51		12.87	
1584	ζ^1	Libræ		15 20 21.99	2	3.370	− 16 13		12.87	
1585		B. A. C. 5090	6.0	15 20 29.09	3	+ 3.626	− 28 22		12.86	
1586	γ^2	Ursæ Minoris		15 20 58.93	1	− 0.155	+ 72 19 54.7	2	12.83	
1587		O. Arg. N 15370		15 21 20.52	3	+ 1.797	51 5 11.9	2	12.80	
1588	10	Serpentis		15 21 34.00	1	3.030	+ 2 20		12.79	
1589		Anonymous		15 21 35		3.854	− 37 12 13.5	1	12.79	
1590		Anonymous		14 21 46		3.712	31 49 1.2	1	12.77	
1591		Lacaille 6405	6.0	15 22 29.52	1	3.595	33 20		12.72	
1592		Lacaille 6409	6.0	15 23 5.84	1	3.729	32 24		12.68	
1593		Lacaille 6410	7.7	15 23 26.50	1	3.870	37 35		12.66	
1594		Anonymous		15 24 45		3.861	37 9 44.4	1	12.57	
1595		B. A. C. 5111, (1st star)		15 24 52.24	2	3.536	24 1		12.56	
1596		B. A. C. 5111, (2d star)		15 24 52.86	2	3.536	− 24 1		12.56	
1597		Radcliffe 3398		15 25 20.05	1	1.543	+ 55 41		12.53	
1598		Lacaille 6421	6.8	15 25 24.04	2	3.742	− 32 42		12.52	
1599		B. A. C. 5117		15 25 36.32	2	3.553	24 43		12.51	
1600		Anonymous		15 26 33		3.726	31 56 34.0	1	12.45	
1601		B. A. C. 5127		15 26 48.63	1	3.644	28 35		12.43	
1602		Lacaille 6439	5.6	15 27 24.85	2	3.745	− 32 37		12.39	
1603	γ	Libræ	4.5	15 27 41.80	2	3.341	14 19		12.37	
1604		Lalande 28391, (1st star)	8.5	15 27 56.06	1	3.613	27 11 17.7	3	12.35	
1605		Lalande 28391, (2d star)	8.0	15 27 56.55	1	3.613	27 11		12.35	
1606		B. A. C. 5142	6.5	15 28 42.74	1	3.588	− 26 2		12.30	
1607	α	Coronæ Borealis		15 28 45.65	30	2.530	+ 27 11		12.29	
1608		Lacaille 6447	7.0	15 29 20.94	1	3.920	− 38 42		12.26	
1609		Lacaille 6448	6.5	15 29 30.15	1	3.919	38 40		12.24	
1610	ψ^1	Lupi	4.8	15 30 53.04	2	3.788	− 33 57		12.15	
1611		Radcliffe 3415	8.0	15 30 57.79	1	2.169	+ 40 18		12.14	
1612		Anonymous	7.0	15 30 59.25	1	3.837	− 35 42		12.14	
1613		Radcliffe 3416	7.5	15 31 3.40	1	2.171	+ 40 15 55.8	2	12.14	
1614		B. A. C 5163	7.0	15 31 7.52	2	3.619	− 27 11		12.13	
1615		Weisse XV, 585	8.5	15 31 27.32	1	3.097	1 20		12.11	
1616	42	Libræ		15 32 0.60	2	3.533	23 22		12.07	
1617		Anonymous	7.5	15 33 31.33	1	3.832	35 19		11.96	
1618		B. A. C. 5171		15 33 32.82	1	3.880	36 58 17.7	1	11.96	
1619	ψ^2	Lupi	5.4	15 33 46.24	2	3.803	34 15		11.95	
1620	κ	Libræ	5.0	15 33 53.11	3	+ 3.446	− 19 13		− 11.94	

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				h. m. s.		s.	° ′ ″		″	
1621		Lacaille 6491 . . .	7.0	15 33 54.81	1	+ 3.736	— 31 44		— 11.94	
1622		Lacaille 6495		15 34 7		3.695	30 5 5.4	1	11.92	
1623		O. Arg. S. 14787 . . .	9.0	15 34 13.09	1	3.399	16 55		11.91	
1624		B A. C. 5184, (1st star) .	7.5	15 34 54.05	1	3.372	15 34		11.87	
1625	η	Libræ	5.8	15 36 12.09		3.366	15 13		11.77	
1626		Anonymous		15 36 22		3.703	30 14 22.8	1	11.76	
1627		Anonymous	9.0	15 36 35.13	1	3.382	15 58		11.75	
1628		B. A. C. 5195	5.5	15 37 8.59	1	3.689	— 29 36		11.71	
1629	α	Serpentis		15 37 22.44	21	2.941	+ 6 52 8.3	3	11.69	
1630		O. Arg. S. 14851 . . .	9.0	15 38 6.24	1	3.445	— 18 55		11.64	
1631		Lacaille 6522	7.0	15 38 52.40	1	3.902	37 15		11.58	
1632		B. A. C. 5211	8.0	15 39 30.89	1	3.595	25 33		11.54	
1633		B. A. C. 5220		15 40 9.11	1	3.546	23 24		11.49	
1634		B. A. C. 5221	6.5	15 40 14.88	2	3.680	29 2		11.48	
1635		O. Arg. S. 14904 . . .		15 40 43		3.449	18 58 43.3	1	11.45	
1636		Lacaille 6541	7.5	15 40 53.38	3	3.768	32 22		11.44	
1637		Weisse XV, 792 . . .	8.8	15 41 56.15	1	3.355	14 24		11.37	
1638		Lacaille 6555	6.5	15 42 42.39	1	3.769	32 15		11.31	
1639		B. A. C. 5240	5.6	15 43 34.58	2	3.697	— 29 27		11.25	
1640	ε	Serpentis		15 43 50.35	6	2.977	+ 4 54 7.6	2	11.23	
1641		Lacaille 6566	9.0	15 44 30.08	2	3.722	— 30 21		11.18	
1642	λ	Libræ	5.0	15 45 12.67	1	3.471	19 45		11.13	
1643	A	Scorpii	5.0	15 45 12.74	1	3.588	24 54		11.13	
1644	θ	Libræ		15 45 51.53	1	3.398	16 19		11.08	
1645		B. A. C. 5258	5.5	15 45 59.04	1	3.626	26 25		11.07	
1646	3	Scorpii	6.0	15 46 15.67	1	3.588	24 50		11.05	
1647		Lacaille 6582	6.3	15 46 45.28	1	3.991	39 27		11.02	
1648	47	Libræ	7.0	15 46 55.18	1	3.456	— 18 57 56.5	2	11.00	
1649	χ	Herculis	5.0	15 47 50.34	2	2.032	+ 42 51		10.93	
1650	ξ	Lupi, (1st star) . . .	6.5	15 47 56.78	1	3.815	— 33 33 9.0	1	10.93	Dec. is that of "8ᵈ., and brighter."
1651	ξ	Lupi, (2d star) . . .	6.5	15 47 57.44	1	3.815	33 33		10.93	
1652		B. A. C. 5275	6.5	15 48 41.09	1	3.650	27 14		10.87	
1653		B. A. C. 5278	5.5	15 49 0.48	1	+ 3.505	— 21 5		10.85	
1654	ζ	Ursæ Minoris . . .		15 49 8.32	4	— 2.324	+ 78 13 23.1	1	10.84	
1655		B. A. C. 5281	6.6	15 49 29.81	2	+ 3.495	— 20 34		10.81	
1656		B. A. C. 5294	6.6	15 50 56.45	1	3.638	26 36		10.70	
1657		B. A. C. 5296		15 50 57.76	1	3.716	29 41		10.70	
1658		Lacaille 6624	7.0	15 51 0.09	1	3.806	32 59		10.70	
1659	δ	Scorpii	3.5	15 52 3.64	11	3.535	22 13		10.63	
1660		B. A. C. 5308	5.5	15 53 59.51	1	3.697	28 44		10.48	
1661		Lacaille 6648	7.4	15 54 86.60	2	3.745	30 33		10.47	
1662		B. A. C. 5312	7.5	15 54 45.25	1	3.637	26 18		10.42	
1663		Lacaille 6657	7.0	15 55 22.96	2	3.949	37 28		10.37	
1664		Lacaille 6658	8.0	15 55 27.34	1	3.948	37 26		10.37	
1665		B. A. C. 5317	6.5	15 55 30.55	1	3.590	— 24 20		10.37	
1666		Weisse XV, 1057 . . .	8.8	15 56 5.33	1	2.842	+ 11 21 18.4	1	10.32	
1667		Anonymous	7.8	15 56 41.86	1	3.305	— 11 29		10.28	
1668	β	Scorpii	3.3	15 57 18.08	11	3.477	— 19 25 6.7	3	10.23	
1669		B. A. C. 5330		15 57 18.48	2	3.477	19 25		10.22	
1670		Weisse XV, 1080 . . .		15 57 21.71	1	3.051	+ 1 3 46.1	2	10.23	
1671	θ	Lupi		15 57 25.		3.920	— 36 24 30.5	1	10.22	
1672		Weisse XV 1086 . . .		15 57 26.86	1	2.963	+ 6 24 1.6	1	10.20	
1673		B. A. C. 5335	6.0	15 57 45.71	1	3.566	— 23 13		10.09	
1674		Anonymous	6.6	15 59 11.69	1	3.999	38 44		10.09	
1675		Lacaille 6695 . . .	6.3	15 59 12.46	1	3.999	38 43		10.09	
1676	11	Scorpii	6.0	15 59 50.15	1	3.326	12 22		10.04	
1677		B. A. C. 5354	6.0	16 0 22.28	2	3.572	23 19		10.00	
1678		O. Arg. S. 15292 . . .	7.3	16 1 14.58	1	3.641	26 5		9.93	
1679		B. A. C. 5374	5.5	16 2 20.55	2	3.719	29 2		9.85	
1680		Anonymous	9.2	16 2 24.63	1	3.525	21 15		9.85	
1681		Weisse XVI, 20 . . .	5.5	16 2 31.04	2	3.009	3 6		9.84	
1682		B. A. C. 5378	6.5	16 2 59.50	2	3.661	26 47		9.80	
1683		Anonymous	7.5	16 3 2.26	1	3.660	26 44		9.80	
1684		Weisse XVI, 38 . . .	7.6	16 3 13.09	2	3.355	13 37 21.1	2	9.78	
1685	ν	Scorpii	4.1	16 3 51.77	2	+ 3.477	— 19 5		— 9.74	

Number.	Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ″ ′		″	
1686	B. A. C. 5389	7.8	16 4 57.23	3	+ 3.711	— 28 35		— 9.65	
1687	B. A. C. 5394	6.5	16 5 20.62	2	3.596	— 24 4		9.62	
1688	B. A. C. 5406	5.0	16 5 57.31	1	0.138	+ 68 11		9.57	
1689	B. A. C. 5403	6.2	16 6 24.70	2	3.623	— 25 7		9.54	
1690	B. A. C. 5409	7.4	16 6 44.62	1	3.668	26 51		9.51	
1691	Weisse XVI, 111	7.9	16 6 51.90	3	3.286	10 18 6.8	2	9.50	
1692	δ Ophiuchi		16 7 0.68	3	3.141	3 19 50.4	6	9.49	
1693	B. A. C. 5418	6.5	16 8 1.98	1	3.596	23 56		9.41	
1694	B. A. C. 5429	5.4	16 9 37.28	3	3.709	28 16		9.29	
1695	ε Ophiuchi		16 10 55.01	1	3.162	4 21		9.19	
1696	19 Scorpii	5.5	16 12 13.06	1	3.598	23 49 41.1	1	9.09	
1697	Lacaille 6796	7.4	16 12 26.16	2	3.844	32 55 5.9	1	9.07	
1698	Lacaille 6797	7.2	16 12 34.26	2	3.844	32 53 46.3	1	9.06	
1699	Anonymous	9.2	16 12 39.58	1	3.635	25 15		9.05	
1700	σ Scorpii	3.6	16 12 40.97	5	3.635	25 15 9.7	1	9.05	
1701	O. Arg. S. 15571	7.0	16 14 51.89	1	3.431	16 41		8.88	
1702	Lacaille 6815, (1st star)	7.5	16 14 56.56	2	3.846	32 52 1.6	1	8.88	Uncertain which star this declination belongs to.
1703	Lacaille 6815, (2d star)	7.7	16 14 56.84	2	3.846	32 52		8.88	
1704	B. A. C. 5457	6.4	16 15 12.04	2	3.982	37 14		8.85	
1705	Lacaille 6818	7.0	16 15 22.29	1	3.890	34 21		8.84	
1706	B. A. C. 5465	7.0	16 15 53.94	1	3.678	26 49 16.9	1	8.80	
1707	ψ Ophiuchi		16 15 54.86	1	3.502	19 42		8.80	
1708	B. A. C. 5487	7.2	16 18 44.56	1	3.741	28 58		8.56	
1709	α Scorpii		16 20 49.72	16	3.667	26 7 2.5	7	8.41	
1710	O. Arg. S. 15671	7.0	16 21 29.10	1	3.634	24 50		8.36	
1711	22 Scorpii		16 21 42.33	1	3.634	— 24 48		8.34	
1712	η Draconis	3.0	16 22 5.92	1	0.799	+ 61 50		8.31	
1713	B. A. C. 5513	6.4	16 22 47.55	1	3.672	— 26 14		8.25	
1714	φ Ophiuchi		16 23 7.74	2	3.429	16 18		8.23	
1715	B. A. C. 5518	8.0	16 23 39.35	1	3.732	28 44		8.18	
1716	Lacaille 6871	7.0	16 23 56.49	3	3.871	33 11		8.16	3.5s.greater than Lacaille.
1717	B. A. C. 5522	7.0	16 24 6.36	1	3.813	31 15		8.15	
1718	Lacaille 6891	7.0	16 27 8.22	2	3.898	33 55		7.91	
1719	B. A. C. 5538	4.8	16 27 10.01	2	3.931	34 58		7.90	
1720	τ Scorpii		16 27 10.31	4	3.723	27 55 17.2	1	7.90	
1721	(* 67) W.		16 27 45.18	1	+ 3.161	— 4 7		7.86	
1722	A Draconis	5.0	16 28 16.24	4	— 0.148	+ 69 4 14.2	2	7.81	
1723	ζ Ophiuchi	2.8	16 29 27.17	9	+ 3.296	— 10 17		7.72	
1724	Lacaille 6910		16 29 47		4.000	36 55 51.2	1	7.69	
1725	Anonymous		16 30		4.000	— 36 55 54.7	1	7.68	
1726	Weisse XVI, 562		16 30 3		3.067	+ 0 14 33.6	2	7.67	
1727	B. A. C. 5556	7.0	16 30 26.22	1	3.775	— 29 38		7.64	
1728	Lacaille 6923		16 31 28		4.001	36 52 27.0	1	7.56	
1729	B. A. C. 5564	7.6	16 31 30.82	2	3.671	25 48		7.55	3.6s. less than B. A. C.
1730	Lacaille 6930	6.0	16 32 42.11	2	3.874	32 52 4.7	1	7.46	
1731	B. A. C. 5571	6.8	16 33 7.34	1	3.630	24 11 30.5		7.42	
1732	Lacaille 6933		16 33 10		4.001	36 48 9.6	2	7.42	
1733	B. A. C. 5572	7.0	16 33 12.38	2	3.797	30 15		7.41	
1734	24 Scorpii		16 33 28.76	2	3.463	— 17 28		7.39	
1735	Weisse XVI, 637	9.0	16 33 32.44	1	+ 3.069	+ 0 7 24.1	2	7.39	
1736	Radcliffe 3589	6.0	16 33 36.74	2	— 3.503	+ 79 16		7.38	
1737	B. A. C. 5595	7.5	16 35 13.15	1	+ 3.694	— 26 32 14.4	1	7.25	
1738	ζ Herculis	2.7	16 36 0.52	7	2.296	+ 31 51		7.19	
1739	B. A. C. 5603	6.4	16 36 15.20	1	3.743	— 28 14 47.7	1	7.17	
1740	B. A. C. 5605	6.7	16 36 24.40	1	3.809	30 32		7.16	
1741	B. A. C. 5608	7.7	16 37 10.52	1	3.692	26 23 10.9	1	7.09	
1742	B. A. C. 5612	7.5	16 37 55.37	1	3.831	31 14		7.03	
1743	25 Scorpii	6.2	16 38 17.28	2	3.663	25 16		7.00	
1744	B. A. C. 5623	6.7	16 39 43.38	2	3.638	24 16		6.88	
1745	B. A. C. 5630	7.4	16 40 34.54	2	3.840	31 24		6.81	
1746	18 Opiuchi	7.2	16 41 13.36	2	3.643	24 23		6.76	
1747	Lacaille 6999, (1st star)	6.6	16 41 34.18	2	4.031	37 17		6.73	
1748	Lacaille 6999, (2d star)	9.1	16 41 34.26	2	4.031	37 17		6.73	
1749	Anonymous		16 41 37		3.799	30 0 25.1	1	6.73	
1750	Anonymous	8.5	16 41 41.34	1	+ 3.180	— 4 54		— 6.72	

Number.	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
1751	Weisse XVI, 792 . . .	8.0	16 41 45.06	1	+ 3.180	− 4 54		− 6.71	
1752	20 Ophiuchi		16 42 5		3.306	10 31 56.0	1	6.69	
1753	Anonymous	7.0	16 42 23.35	1	4.149	40 30		6.66	
1754	μ^1 Scorpii	3.3	16 42 23.59	1	4.050	37 48 11.2	1	6.66	
1755	B. A. C. 5639	6.3	16 42 44.69	1	4.149	40 29		6.63	
1756	B. A. C. 5641	7.5	16 42 49.22	2	3.649	24 35		6.63	
1757	μ^2 Scorpii	4.0	16 42 51.61	1	4.050	37 46 28.6	1	6.62	
1758	Anonymous		16 42 57		3.803	30 5 10.3	1	6.61	
1759	Lacaille 7011	6.4	16 43 9.47	2	4.058	37 21		6.60	
1760	Anonymous		16 43 28		4.016	36 46 7.5	1	6.57	
1761	B. A. C. 5653	7.2	16 44 6.08	2	3.851	31 38		6.52	
1762	O. Arg. S. 16046 . . .		16 44 13		3.807	30 11 26.5	1	6.51	
1763	O. Arg. S. 16060 . . .		16 44 49		3.807	30 10 7.2	1	6.46	
1764	B. A. C. 5671	6.0	16 45 40.31	2	3.814	30 21		6.39	
1765	B. A. C. 5672 . . .	7.0	16 45 49.59	1	3.827	30 48		6.38	
1766	B. A. C. 5673		16 45 51		3.678	25 35 38.4	2	6.38	
1767	Anonymous		16 45 57		3.679	25 34 43.5	2	6.37	
1768	B. A. C. 5678	6.4	16 46 10.04	3	3.839	31 10		6.35	
1769	22 Ophiuchi	7.0	16 46 23.34	1	3.618	23 17		6.33	
1770	Anonymous	7.5	16 46 34.72	1	3.840	31 12		6.31	
1771	Anonymous		16 46 47	1	4.027	36 57 25.4	1	6.30	
1772	B. A. C. 5684	7.4	16 46 53.10	2	3.842	31 15		6.29	
1773	B. A. C. 5687		16 47 12		3.673	25 23 28.0	1	6.26	
1774	Anonymous		16 47 16		3.808	30 5 20.1	1	6.26	
1775	Anonymous		16 47 18.68	1	3.842	31 14		6.25	
1776	B. A. C. 5690	7.0	16 47 18.82	2	3.839	31 7		6.25	
1777	B. A. C. 5695	7.0	16 47 57.14	1	3.451	16 35		6.20	
1778	Anonymous		16 49 14		3.807	29 58 59.6	1	6.09	
1779	Lacaille 7065	6.1	16 49 24.09	2	4.052	37 33		6.08	
1780	Anonymous		16 49 43		3.807	− 29 59 5.4	1	6.05	
1781	κ Ophiuchi	3.8	16 51 2.60	11	2.856	+ 9 36		5.94	
1782	B. A. C. 5709		16 51 25		3.665	− 24 52 31.4	1	5.91	
1783	O. Arg. S. 16184 . . .		16 51 30		3.810	30 1 22.5	1	5.91	
1784	26 Ophiuchi		16 51 36		3.662	24 46 15.0	1	5.90	
1785	Anonymous		16 52 33		4.039	37 5 23.4	1	5.82	
1786	B. A. C. 5718		16 52 50		3.869	31 55 57.3	1	5.79	
1787	Lacaille 7087		16 52 51		3.908	33 9 3.8	1	5.79	
1788	B. A. C. 5721		16 53 24		3.872	32 0 15.0	1	5.75	
1789	Anonymous		16 54 34		3.810	29 55 54.0	1	5.65	
1790	B. A. C. 5738	6.7	16 55 24.07	3	3.684	25 29 39.6	1	5.58	
1791	B. A. C. 5739	7.4	16 55 46.30	2	3.849	31 10		5.55	
1792	Anonymous	7.8	16 55 56.49	1	3.850	31 12		5.54	
1793	B. A. C. 5743		16 55 59.80	1	3.622	23 11		5.53	
1794	O. Arg. S. 16284 . . .	6.4	16 56 6.96	4	3.683	25 26		5.52	
1795	O. Arg. S. 16298 . . .	7.0	16 56 46.51	1	3.680	25 17		5.47	
1796	Anonymous . . .		16 57 0		4.038	36 54 8.2	1	5.44	
1797	Lacaille 7128		16 57 7.04	1	3.775	28 38		5.43	6s. greater than Lacaille.
1798	Lacaille 7133		16 58 29.57	1	4.186	40 50		5.32	
1799	B. A. C. 5762	6.8	16 58 44.74	1	3.843	30 53		5.30	
1800	O. Arg. S. 16352 . . .		16 59 55		3.720	26 38 55.0	2	5.20	
1801	B. A. C. 5771 . . .	6.0	17 0 7.26		+ 3.477	− 17 25		5.18	
1802	ε Ursæ Minoris	4.1	17 0 26.77	8	− 6.438	+ 82 15 40.1	3	5.16	
1803	η Ophiuchi	4.0	17 2 21.11	2	+ 3.432	− 15 32 52.5	1	4.99	
1804	O. Arg. S. 16429 . . .		17 2 57		3.719	26 31 24.8	2	4.94	
1805	Lacaille 7163	6.6	17 3 37.32	2	4.077	37 47		4.88	
1806	B. A. C. 5792	6.4	17 3 39.24	2	3.749	27 35 6.5	1	4.88	
1807	B. A. C. 5793	5.8	17 3 52.68	2	3.891	32 16		4.87	
1808	Anonymous . . .		17 4 51		3.985	− 35 7 59.2	1	4.78	
1809	O. Arg. N. 16862 . . .		17 4 51.22	1	1.467	+ 51 1		4.78	
1810	B. A. C. 5796	6.9	17 5 15.86	1	3.752	− 27 37 35.6	1	4.75	
1811	O. Arg. S. 16505 . . .	7.5	17 6 31.80	1	3.716	26 21 56.6	2	4.64	
1812	A Ophiuchi, (1st star) . .	5.6	17 6 44.30	4	3.717	26 23 39.1	3	4.62	
1813	A Ophiuchi, (2d star) . .	5.7	17 6 44.50	4	3.717	26 23 34.2	1	4.62	
1814	B. A. C. 5809	6.4	17 6 55.02	3	3.824	30 2		4.60	
1815	Anonymous		17 7 19		+ 3.994	− 35 19 51.6	1	− 4.57	

Name	Magnitude	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
		h. m. s.		s.	° ′ ″		″	
Schwerd 1014		17 7 23.49	1	— 3.207	+ 78 17		— 4.56	
B. A. C. 5813	7.3	17 7 36.90	3	+ 3.717	— 26 20 28.6	2	4.55	
α Herculis		17 8 15.90	20	2.734	+ 14 33 11.3	6	4.49	
α Herculis, (2d star) . . .		17 8 16.22	2	2.734	+ 14 33		4.48	
Anonymous		17 8 28		3.986	— 35 3 56.6	1	4.47	
38 Ophiucqi		17 8 58		3.721	26 28 14.0	2	4.43	
B. A. C. 5833	6.8	17 10 14.92	2	3.863	31 13		4.32	
O. Arg. S. 16607		17 11 22		3.722	26 27 32.1	1	4.23	
O. Arg. S. 16623	7.9	17 11 49.13	2	3.721	26 24 4.1	2	4.18	
ξ Ophiuchi		17 12 36.94	2	3.573	20 57 32.7	1	4.12	
O. Arg. S. 16664 . . .		17 12 46	2	3.720	26 21 18.2	2	4.10	
Lacaille 7241	5.9	17 13 6.67	1	4.082	37 39		4.08	
B. A. C. 5848	7.4	17 13 10.88	2	3.839	30 21		4.07	
θ Ophiuchi		17 13 24.84	1	3.678	24 51 21.0	1	4.05	
Anonymous		17 13 28		3.996	35 12 7.8	1	4.04	
Anonymous		17 13 37.98	1	4.163	39 47		4.03	
Anonymous		17 13 44		3.997	35 14 14.4	1	4.02	
Lacaille 7244		17 14 16		4.016	35 46 18.3	1	3.98	
B. A. C. 5858		17 14 35		3.682	24 57 34.9	1	3.95	
Weisse XVII, 254 . . .	8.5	17 15 11.93	1	3.214	6 11		3.90	
Anonymous		17 15 18		3.998	35 14 58.8	1	3.89	
B. A. C. 5861	7.8	17 15 32.58	2	3.785	28 31 2.2	1	3.87	
B. A. C. 5868	6.7	17 16 33.00	1	3.660	24 7		3.78	
Lacaille 7282	7.0	17 17 26.20	1	3.958	33 59		3.70	8s. less than Lacaille.
b Ophiuchi	4.5	17 17 49.35	10	3.658	24 3		3.67	
B. A. C. 5878	6.2	17 18 15.58	1	3.708	25 48 53.4	1	3.63	
Anonymous		17 19 33		3.994	— 35 4 56.4	1	3.52	
σ Ophiuchi	4.5	17 19 34.24	1	2.974	+ 4 16		3.52	
B. A. C. 5892	7.0	17 19 38.32	1	3.869	— 31 15		3.51	
B. A. C. 5896		17 20 0.41	1	3.698	25 23		3.48	
B. A. C. 5897	6.5	17 20 9.50	1	3.875	31 23		3.47	
Lacaille 7312	7.3	17 20 52.19	3	+ 3.947	— 33 36		3.41	
O. Arg. N. 17136	7.6	17 20 59.87	1	— 2.872	+ 77 30		3.40	
Anonymous		17 22 16		+ 3.998	— 35 4 37.9	1	3.29	
Lacaille 7324	6.8	17 22 33.96	4	3.949	33 36		3.26	
c^2 Ophiuchi	5.2	17 22 52.56	4	3.655	23 51 1.5	1	3.24	
B. A. C. 5909	6.0	17 23 2.87	1	3.721	26 10		3.22	
Lacaille 7330	5.9	17 23 8.45	1	3.968	34 10		3.21	
Anonymous	7.7	17 25 16.23	1	3.912	32 26		3.03	
B. A. C. 5924	6.5	17 25 33.43	2	3.891	31 46		3.00	
B. A. C. 5923	5.8	17 25 33.85	3	3.912	32 26		3.00	
Lacaille 7349	6.6	17 26 11.06	2	4.081	37 20		2.95	
B. A. C. 5938	7.0	17 27 51.83	1	3.900	32 2		2.80	
Anonymous		17 28 10		4.007	35 14 27.4	1	2.78	
Lacaille 7357	6.8	17 28 16.90	2	4.098	37 47		2.77	6s. greater than Lacaille.
Lacaille 7362	7.5	17 28 20.02	2	3.974	— 34 15		2.76	
α Ophiuchi		17 28 26.21	23	2.774	+ 12 39 53.7	8	2.76	
B. A. C. 5946		17 29 22.73	1	3.776	— 27 57 26.2	1	2.67	
ν^1 Draconis	4.5	17 29 25.33	1	1.160	+ 55 17		2.67	
ν^2 Draconis	4.7	17 29 30.57	1	1.160	+ 55 16		2.66	
B. A. C. 5956		17 30 28		3.834	— 29 52 28.0	1	2.58	
Anonymous		17 30 32		4.005	35 8 4.7	1	2.57	
B. A. C. 5960	7.0	17 30 53.75	1	3.905	32 7		2.54	
Anonymous	7.0	17 31 3.42	1	3.906	32 9		2.53	
Anonymous	8.0	17 31 13.90	1	3.906	32 9		2.51	
Anonymous		17 31 22		4.003	35 4 24.8	1	2.50	
B. A. C. 5964	7.0	17 31 51.07	1	3.905	32 8		2.46	
B. A. C. 5966	7.8	17 31 54.27	1	3.772	27 49		2.45	
Lacaille 7395	6.2	17 32 45.60	3	3.949	33 27		2.38	3s. less than Lacaille.
κ Scorpii	3.0	17 32 48.32	1	4.145	38 57 42.1		2.37	
ο Serpentis	5.0	17 33 32.87	3	3.374	12 48		2.31	
B. A. C. 5977	6.4	17 33 55.53	2	3.933	32 57		2.28	
Anonymous		17 34 5		4.010	35 13		2.27	
B. A. C. 5980	6.7	17 34 25.56	1	3.922	32 36		2.24	
Lacaille 7406	6.0	17 34 25.71	1	+ 4.138	— 38 44		— 2.24	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
1881		B. A. C. 5981		17 34 29		+ 3.272	— 27 48 44.0	1	— 2.23	
1882		B. A. C. 5983		17 34 35		3.844	— 30 6 17.5	1	2.22	
1883		Rumker 5958	7.5	17 34 51.37	1	2.710	+ 15 15		2.20	
1884	58	Ophiuchi		17 35 2.47	2	3.599	— 21 37		2.18	
1885		Lacaille 7414	7.1	17 35 38.75	3	4.019	35 28		2.13	
1886		B. A. C. 5989	6.9	17 35 45.54	2	3.653	23 36		2.12	
1887		Anonymous		17 35 59		4.007	— 35 7 24.2	1	2.10	
1888	β	Ophiuchi	4.2	17 36 33.52	1	2.964	+ 4 38		2.05	
1889		Lacaille 7420	5.0	17 36 48.14	1	4.157	— 39 12		2.03	
1890		Lacaille 7424	6.0	17 37 30.93	1	4.114	38 3		1.97	
1891		Lacaille 7423	7.0	17 37 35.90	1	+ 4.163	— 39 21		1.96	
1892	ω	Draconis	4.6	17 37 46.38	3	— 0.363	+ 68 49 20.5	1	1.94	
1893	ι^1	Scorpii	3.5	17 37 47.52	2	+ 4.191	— 40 4 3.4	2	1.94	
1894		Anonymous	7.4	17 38 9.50	2	3.654	23 38		1.91	
1895		Lacaille 7430	6.6	17 38 29.92	2	3.978	34 15		1.88	
1896	3	Sagittarii		17 38 44.91	1	3.773	27 46		1.86	
1897		Lacaille 7433	6.5	17 38 51.45	1	4.115	38 5		1.85	
1898		B. A. 6011	7.2	17 39 7.08	1	3.925	32 39		1.82	2.7s. greater than B. A. C.
1899		Lacaille 7448	6.5	17 40 6.34	1	4.016	35 19		1.74	
1900	ι^2	Scorpii		17 40 24		4.191	— 40 2 24.2	1	1.71	
1901	γ	Ophiuchi	5.0	17 40 52.49	1	3.008	+ 2 46		1.67	
1902	μ	Herculis	3.3	17 40 58.83	8	2.369	+ 27 48 15.3	1	1.66	
1903		B. A. C. 6023	6.5	17 41 23.92	1	3.670	— 24 9 24.7	2	1.63	
1904		Lacaille 7459	7.2	17 41 37.45	3	3.960	33 40		1.61	
1905		Anonymous	6.5	17 41 43.47	1	4.016	35 19		1.60	
1906		Anonymous	8.0	17 41 45.42	1	4.016	35 19		1.59	
1907		B. A. C. 6031	5.5	17 43 1.46	1	3.984	34 22		1.48	
1908		Lacaille 7469	7.5	17 43 29.24	1	3.881	31 15		1.44	10s. greater than Lacaille.
1909		B. A. C. 6037	8.5	17 43 56.64	3	3.995	34 42		1.41	
1910		Anonymous	6.8	17 44 3.66	1	3.716	25 47		1.39	
1911		B. A. C. 6041	7.2	17 44 4.44	1	3.533	19 5		1.39	10s. less than B. A. C.
1912		B. A. C. 6043	6.0	17 44 24.02	1	+ 3.997	— 34 43		1.36	
1913	ψ^1	Draconis	4.6	17 44 25.95	5	— 1.008	+ 72 13		1.36	
1914		Anonymous	7.0	17 44 34.67	1	+ 3.997	— 34 45		1.35	
1915		Anonymous	6.0	17 44 54.52	1	3.996	34 43		1.32	
1916		B. A. C. 6045	5.0	17 45 8.54	1	4.001	34 51		1.30	5.6s. greater than B. A. C.
1917		Anonymous	6.5	17 45 18.41	1	3.990	34 32		1.28	
1918		Anonymous	7.0	17 45 28.74	1	3.992	34 35		1.27	
1919		Anonymous	6.5	17 45 28.93	1	3.999	34 47		1.27	
1920		B. A. C. 6051	5.8	17 45 39.52	2	4.058	36 27		1.25	
1921	63	Ophiuchi	6.8	17 46 17.04	1	3.690	24 51		1.20	
1922		O. Arg. S. 17349	7.5	17 46 52.27	1	3.749	26 54 6.1	1	1.15	
1923		B. A. C. 6057	6.0	17 47 6.71	1	3.921	32 27		1.13	
1924		Anonymous	7.5	17 47 27.76	1	3.992	34 35		1.10	
1925		B. A. C. 6059	6.2	17 47 40.02	2	3.745	26 44		1.08	
1926		B. A. C. 6063	6.2	17 47 51.52	1	3.783	28 2		1.06	
1927		Lacaille 7499	5.5	17 47 58.77	1	4.156	39 5		1.05	
1928		Lacaille 7504	6.1	17 48 15.38	2	4.158	39 7		1.03	
1929		Anonymous	8.2	17 49 21.14	1	4.073	36 51		0.93	
1930		B. A. C. 6070	5.8	17 49 25.12	1	4.073	36 50		0.93	
1931		Lacaille 7516	7.0	17 49 42.36	1	4.076	36 55		0.90	Differs from observation of 1862, 17s.
1932		B. A. C. 6072	6.9	17 49 46.08	1	3.804	28 44		0.89	
1933		B. A. C. 6074, (1st star)	7.0	17 50 5.96	1	3.850	30 14		0.87	
1934		B. A. C. 6074, (2d star)	8.5	17 50 6.34	1	3.850	30 14		0.87	
1935		B. A. C. 6076	6.8	17 50 42.66	2	3.953	33 24		0.81	
1936		Anonymous	7.5	17 51 8.16	1	4.078	36 58		0.77	
1937	4	Sagittarii	4.5	17 51 14.66	2	3.661	23 47 57.2	1	0.77	
1938		B. A. C. 6083	6.2	17 52 20.19	5	4.056	36 22		0.67	
1939		Anonymous	7.6	17 52 41.90	2	4.056	36 22		0.64	
1940		Anonymous	7.0	17 53 16.18	1	3.673	— 24 13		0.59	
1941	γ	Draconis		17 53 21		1.391	+ 51 30 22.0	2	0.58	
1942		O. Arg. S. 17510	7.0	17 54 4.01	3	3.674	— 24 15		0.52	
1943		O. Arg. S. 17512	8.0	17 54 5.24	1	3.674	24 14		0.52	
1944	7	Sagittarii	6.8	17 54 16.36	1	3.674	24 17		0.50	
1945	9	Sagittarii, (1st star)	6.5	17 55 17.30	3	+ 3.677	— 24 21 33.9	1	— 0.41	

	Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
	O. Arg. S. 17540 . . .	6.5	17 55 21.90	2	+ 3.676	— 24 19		— 0.40	
	O. Arg. S. 17553 . . .		17 55 50.70	1	3.678	24 23		0.36	
	Lacaille 7551	6.9	17 56 15.33	2	4.064	36 34		0.33	
	B. A. C. 6111	6.5	17 56 35.27	1	3.678	24 24		0.30	
γ²	Sagittarii	3.9	11 56 48.89	8	3.857	30 25 18.3	1	0.28	
	B. A. C. 6120	6.0	17 57 54.45	1	3.794	28 22		0.18	
	Lacaille 7563	7.0	17 58 14.75	1	4.138	38 35		0.15	
	B. A. C. 6127		17 59 13		3.797	28 28 5.3	1	0.07	
	B. A. C. 6128	7.0	17 59 31.02	1	4.408	44 58		0.04	
	Lacaille 7580	6.5	17 59 52.82	2	4.068	36 41		0.01	
	B. A. C. 6131	7.0	17 59 55.69	2	3.880	31 9		0.01	
	B. A. C. 6130	6.0	17 59 56.13	1	3.744	30 0		— 0.01	
	B. A. C. 6132	7.0	18 0 14.56	2	3.769	— 25 29		+ 0.02	
o	Herculis		18 2 4.89	1	2.339	+ 28 45		0.18	
	Lacaille 7595	6.8	18 2 19.22	2	4.000	— 35 3		0.20	
	Anonymous	9.5	18 2 36.15	2	3.487	17 10		0.22	
	Anonymous	8.5	18 2 37.18	3	3.487	17 10		0.22	
	Lacaille 7598		18 2 45		4.169	39 22 5.8	1	0.24	
	B. A. C. 6160	5.5	18 3 4.40	1	3.811	28 55		0.26	
	Lacaille 7605		18 3 16		4.161	39 11 3.2	1	0.28	
	Anonymous	8.6	18 4 35.44	1	4.103	37 39		0.40	
	Anonymous	6.8	18 4 46.53	2	3.995	34 38		0.41	
μ	Sagittarii	4.3	18 5 23.46	12	3.587	21 5 28.7	4	0.47	
	Anonymous	7.0	18 5 39.80	1	3.838	29 48		0.49	
	Lacaille 7629	6.3	18 6 8.02	2	3.994	34 37 50.0	1	0.54	
	B. A. C. 6174	7.0	18 6 21.78	1	4.065	— 36 36 38.2	1	0.56	
A	Herculis	5.0	18 6 37.96	1	2.257	+ 31 22		0.58	
15	Sagittarii		18 6 51.84	1	3.579	— 20 46		0.60	
	Anonymous	6.3	18 7 17.27	1	3.523	18 40		0.64	
	B. A. C. 6187	6.7	18 8 8.99	3	3.775	27 45		0.71	
	Lacaille 7646	6.6	18 8 19.31	3	3.978	34 9		0.73	
	Anonymous	8.5	18 8 24.26	1	3.979	34 11		0.73	
	B. A. C. 6191	6.0	18 8 31.43	1	3.792	28 20		0.74	
	Lacaille 7657	6.2	18 9 10.84	1	3.998	34 44		0.80	
	B. A. C. 6194	4.8	18 9 17.34	1	3.755	27 6		0.82	
	B. A. C. 6199	6.4	18 10 1.91	2	3.713	25 39		0.87	
	O. Arg. S. 18015 . . .	7.2	18 10 29.92	1	+ 3.523	— 18 40		0.92	
40	Draconis, S. P. . . .		18 10 30.75	1	— 4.485	+ 79 59		0.92	
	O. Arg. S. 18017 . . .	8.2	18 10 30.88		+ 3.523	— 18 40		0.92	
41	Draconis, S. P. . . .		18 10 37.05	1	— 4.487	+ 79 59		0.93	
	Lacaille 7661	6.5	18 10 53.56	4	+ 4.045	— 35 28		0.95	
δ	Sagittarii	3.0	18 12 1.87	3	3.839	29 53 0.0	1	1.05	
	B. A. C. 6214	6.5	18 12 30.60	2	3.727	26 8		1.09	
	B. A. C. 6222	6.5	18 13 33.72	1	3.638	22 59		1.18	
	Anonymous		18 13 40		3.736	26 28 39.0	1	1.20	
η	Serpentis	2.9	18 14 3.97	6	3.140	2 55 55.3	1	1.23	
	Anonymous	8.4	18 14 12.69	1	3 433	15 9		1.24	
	O. Arg. S. 18115 . . .	8.2	18 14 13.24	1	3.433	15 9		1.24	
	Anonymous		18 15 29		3.737	26 30 53.7	1	1.35	
	Lacaille 7695		18 15 58		4.043	36 3 45.2	2	1.40	
	Anonymous		18 16 52		+ 3.921	— 31 54 46.7	1	1.47	
δ	Ursæ Majoris		18 17 30		—19.381	+ 86 36 7.5	12	1.53	
	S. P.					8.2	2		
	Lacaille 7708		18 17 58		+ 4.044	— 36 5 34.0	2	1.57	
λ	Sagittarii		18 19 19.78	4	3.707	25 29 42.1	3	1.69	
	B. A. C. 6266	7.0	18 19 37.61	1	3.640	23 5		1.72	
	B. A. C. 6267	6.7	18 19 46.25	1	3.502	17 53		1.73	
	B. A. C. 6271		18 20 16		3.820	29 20 30.3	1	1.77	
	B. A. C. 6273	6.2	18 20 43.81	2	3.703	25 21		1.81	
	B. A. C. 6274	6.8	18 20 48.38	2	3.956	33 35		1.82	
	B. A. C. 6283		18 21 41		3.806	28 52 59.2	1	1.89	
	B. A. C. 6285	5.0	18 21 53.79	1	3.939	33 5		1.91	
	Lacaille 7757	6.5	18 23 10.82	1	4.019	35 26		2.02	
	B. A. C. 6293	6.7	18 23 11.55	2	3.513	18 21		2.03	
	Anonymous . . .	7.0	18 23 12.66	1	3.936	33 1		2.03	
	O. Arg. S. 18328 . . .	5.0	18 23 14.09	1	+ 3.517	— 18 30		+ 2.03	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
2011		B. A. C. 6295	7.2	18 23 19.64	1	+ 3.818	− 29 17 4.9	1	+ 2.04	
2012	θ	Coronæ Australis		18 23 31		4.286	42 24 30.2	1	2.05	
2013		Anonymous	8.0	18 24 0.98	1	3.938	33 5		2.10	
2014		B. A. C. 6305	6.2	18 24 46.60	4	3.939	33 6 58.2	1	2.16	
2015		B. A. C. 6308	7.0	18 24 54.20	4	3.937	33 4 39.8	1	2.17	
2016		O. Arg. S. 18395	8.0	18 25 53.01	1	3.494	17 38		2.26	
2017		B. A. C. 6317	7.2	18 26 16.00	2	3.934	32 59 44.0	1	2.29	
2018		B. A. C. 6321		18 27 3		4.045	29 48 19.6	1	2.36	
2019	1	Aquilæ	4.2	18 27 35.30	13	3.266	8 20 19.0	5	2.41	
2020		B. A. C. 6331		18 28 32		3.712	25 46 18.8	2	2.49	
2021		B. A. C. 6334	7.0	18 29 10.40	1	3.926	32 47		2.54	
2022		Bradley 2333	5.5	18 29 59.72	1	3.652	23 37		2.62	
2023		B. A. C. 6343		18 30 0		3.652	23 37 10.4	1	2.62	
2024		B. A. C. 6344	7.0	18 30 19.77	1	3.936	33 7		2.65	
2025		O. Arg. S. 18495	7.5	18 30 32.18	1	3.463	16 26		2.66	
2026		B. A. C. 6346	6.6	18 30 32.30	2	3.647	23 28		2.66	
2027		O. Arg. S. 18505	8.5	18 31 9.62	1	3.707	25 37		2.72	
2028		Anonymous	8.6	18 31 13.01	1	3.707	25 36		2.72	
2029		O. Arg. S. 18506	8.3	18 31 13.43	1	3.707	25 37		2 72	
2030		Lacaille 7815	6.8	18 31 20.96	2	3.965	− 33 59		2.73	
2031	α	Lyræ		18 32 11.89	26	2.013	+ 38 39 20.9	28	2.81	
2032		Weisse XVIII, 793	9.0	18 32 41.31	1	3.288	− 9 16		2.85	
2033		Lacaille 7823	6.0	18 33 11.32	1	4.159	39 24 51.2		2.89	
2034		O. Arg. S. 18568	7.3	18 34 16.72	1	3.693	25 10		2.98	
2035		B. A. C. 6363		18 35 14		4.173	39 49 18.0	1	3.07	
2036		Lacaille 7831		18 35 17		4.175	39 52 45.8	1	3.08	
2037		Lacaille 7838	6.4	18 35 54.90	1	4.031	35 59		3.13	
2038		Weisse XVIII, 887	8.0	18 35 59.54	1	3.097	1 5		3.14	
2039		B. A. C. 6369		18 36 13		3.692	25 8 49.2	1	3.15	
2040	φ	Sagittarii		18 36 55		3.748	27 7 49.0	1	3.21	
2041		Anonymous	8.7	18 37 25.65	1	3.098	1 9		3.26	
2042		B. A. C. 6377		18 37 52.30	1	3.826	29 46		3.30	
2043		Lacaille 7858	6.5	18 38 51.93	1	4.071	37 10		3.38	
2044	5	Aquilæ	7.0	18 39 14.79	1	3.097	1 6		3.41	
2045		Weisse XVIII, 982	7.7	18 39 16.02	1	3.097	1 6		3.42	
2046		Lacaille 7860		18 39 25		3.963	34 3 16.9	2	3.43	
2047		O. Arg. S. 18672	6.8	18 39 33.85	1	3.562	20 25		3.44	
2048		Lacaille 7865		18 39 58.77	1	3.991	34 54		3.48	
2049		O. Arg. S. 18683	9.3	18 40 2.02	1	3.610	22 14		3.48	
2050		B. A. C. 6396		18 40 52		3.751	27 16 40.4	1	3.56	
2051		Brisbane 6501		18 41 8.85	1	4.371	44 38		3.58	
2052	29	Sagittarii	6.0	18 41 21.52	2	3.563	20 28 47.8	1	3.60	
2053		B. A. C. 6401		18 41 54		3.740	26 55 32.4	1	3.64	
2054		Lalande 34984	7.0	18 42 11.45	1	3.212	6 4		3.67	
2055		Weisse XVIII, 1058	8.2	18 42 12.53	1	3.212	6 6		3.67	
2056		O. Arg. S. 18735	6.2	18 42 25.46	1	3.611	22 19		3.69	
2057		B. A. C. 6408	7.0	18 42 41.86	1	3.751	27 19 20.9	1	3.71	
2058		B. A. C. 6413	5.5	18 43 43.29	1	3.816	29 32		3.80	
2059		O. Arg. S. 18765	6.0	18 43 43.67	2	3.604	22 5		3.80	
2060		Lacaille 7901	6.6	18 44 21.98	1	4.041	− 36 27		3.86	
2061	β	Lyræ		18 44 54.67	13	2.214	+ 33 12 8.5	5	3.90	
2062		Comp. β Lyræ		18 44 56.43	1	2.214	+ 33 12		3.90	
2063		O. Arg. S. 18802	7.8	18 45 39.53	1	3.769	− 28 0		3.97	
2064	ν^1	Sagittarii	5.0	18 45 42.92	2	3.626	22 54 45.6	1	3.97	
2065		B. A. C. 6439		18 46 32		3.809	29 23 6.1	1	4.04	
2066	σ	Sagittarii	3.5	18 46 34.94	6	3.724	26 27 56.6	1	4.05	
2067	ν^2	Sagittarii		18 46 39.19	1	3.623	22 50		4.06	
2068		Anonymous	7.5	18 47 8.76	1	3.936	33 28		4.10	
2069		Lacaille 7926	6.8	18 47 45.82	1	3.938	− 33 30		4.15	
2070	θ	Serpentis, (1st star)	5.8	18 49 15.56	1	3.164	+ 4 1		4.27	
2071	θ	Serpentis, (2d star)	6.0	18 49 16.98	1	3.164	+ 4 1		4.28	
2072	ξ^2	Sagittarii	4.0	18 49 22.57	1	3.581	− 21 17		4.28	
2073		Lacaille 7932		18 49 30		4.156	39 42 56.6	1	4.30	
2074		Weisse XVIII, 1276	8.6	18 50 38.39	2	3.420	− 14 57		4.39	
2075		Rumker 6881	7.3	18 50 41.83	1	+ 2.566	+ 21 12		+ 4.40	

Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860 0.	No. of obs.	Precession.	Remarks.
		h. m. s.		s.	° ′ ″		″	
50 Draconis		18 50 52		— 1.888	+ 75 15 58.3	1	+ 4.41	
B. A. C. 6474	7.3	18 51 12.38	1	+ 3.772	— 28 14		4.44	
Weisse XVIII, 1294 . .	8.0	18 51 27.97	2	3.282	9 9		4.47	
Weisse XVIII, 1301 . .	8.0	18 51 39.18	1	3.263	8 21		4.48	
Lacaille 7953	6.5	18 51 50.06	1	3.932	33 25		4.50	
Dorpat 2425, (1st star) .	8.2	18 52 57.30	2	3.262	8 18		4.59	
Dorpat 2425, (2d star) .	8.0	18 52 57.41	2	3.262	8 18		4.59	
Lacaille 7961	7.0	18 53 16.50	1	3.978	34 49		4.62	
Lacaille 7960	7.0	18 53 19.65	1	4.027	36 16		4.62	
Weisse XVIII, 1344 . .	8.8	18 53 30.44	2	3.414	14 43		4.64	
ζ Sagittarii		18 53 50		3.825	30 4 33.4	1	4.67	
B. A. C. 6490	6.0	18 53 53.33	1	3.677	25 2 10.2	1	4.67	
B. A. C. 6499		18 55 25		3.860	31 14 52.8	2	4.80	
Dorpat 2434, (1st star) .	7.8	18 55 31.74	2	3.094	0 59		4.81	
Dorpat 2434, (2d star) .		18 55 32.86	1	+ 3.094	— 0 59		4.81	
υ Draconis		18 56 6.11	1	— 0.719	+ 71 7		4.86	
B. A. C. 6505	7.0	18 56 9.87	1	+ 3.689	— 25 27		4.87	
Lacaille 7985	6.8	18 56 27.57	2	3.944	33 55		4.89	
Weisse XVIII, 1430 . .	8.5	18 56 34.68	1	3.272	8 47		4.90	
γ Coronæ Australis . . .		18 56 57		4.057	37 15 35.3	1	4.90	
Weisse XVIII, 1443 . .	9.0	18 56 59.36	3	3.275	8 55		4.94	
Weisse XVIII, 1449 . .	8.0	18 57 10.94	4	3.274	— 8 51		4.95	
B. Z. 299, 167	6.8	18 57 41.96	2	2.572	+ 21 4		4.99	
B. Z. 302, 3	9.0	18 58 11.10	2	2.575	+ 21 1		5.04	
τ Sagittarii		18 58 11.85	1	3.756	— 27 52		5.04	
Anonymous		18 58 17		3.279	— 9 6 43.8	1	5.05	
Anonymous		18 58 54.76	1	2.575	+ 21 1		5.10	
ζ Aquilæ		18 58 58.51	7	2.758	13 39 29.8	4	5.10	
B. Z. 302, 4	8.0	18 58 58.68	1	2.575	+ 21 2		5.10	
Dorpat 2447, (1st star) .	9.2	18 59 19.96	2	3.109	— 1 38		5.13	
Dorpat 2447, (2d star) .	7.4	18 59 20.21	2	3.109	1 38		5.13	
Anonymous	8.0	18 59 32.57	1	3.944	34 0		5.15	
Lacaille 7998	7.3	18 59 33.41	4	3.944	34 0		5.15	
B. A. C. 6533		18 59 41		3.671	24 52 18.6	1	5.16	
Anonymous	9.2	18 59 57.49	1	3.092	0 54		5.19	
B. A. C. 6540	6.6	19 0 16.73	2	3.631	23 24		5.21	
β Coronæ Australis . . .		19 0 24		4.138	39 33 29.8	1	5.22	
B. A. C. 6546		19 1 1.28	1	3.739	27 20		5.28	
O. Arg. S. 19145 . . .	7.0	19 1 7.02	1	3.630	23 24		5.29	
π Sagittarii		19 1 26.16	2	3.573	21 14 32.0	2	5.31	
B. A. C. 6549	5.9	19 1 32.50	2	3.823	30 13		5.32	
B. A. C. 6554	6.2	19 2 26.38	3	+ 3.807	— 29 44		5.39	
O. Arg. N. 18967 . . .	8.4	19 3 9.94	3	— 0.321	+ 69 14		5.46	
O. Arg. N. 18980 . . .	8.2	19 3 47.40	4	— 0.292	+ 69 5		5.51	
B. A. C. 6562	6.1	19 4 36.09	3	+ 3.702	— 26 8		5.58	
B. A. C. 6565	6.8	19 5 15.24	2	3.729	27 6 17.7	1	5.63	
Anonymous	7.5	19 5 35.29	5	3.814	29 30		5.66	
B. A. C. 6568	6.3	19 5 43.10	4	3.814	30 3 57.7	1	5.67	
B. A. C. 6569	6.9	19 5 49.13	5	3.796	29 28		5.68	
Lacaille 8045	7.0	19 6 37.70	1	3.929	33 46		5.75	
ψ Sagittarii	6.1	19 6 57.20	2	3.683	25 29		5.78	
B. A. C. 6576	6.6	19 7 1.34	2	3.653	24 25		5.78	
Lacaille 8049		19 7 19		3.937	34 2 59.1	1	5.81	
Lacaille 8051	6.0	19 7 23.85	1	3.927	33 46		5.81	
B. A. C. 6578	6.7	19 7 35.06	4	3.693	25 54		5.83	
O. Arg. S. 19314 . . .	7.3	19 8 0.63	1	3.778	28 55		5.86	
Anonymous		19 8 57		3.271	8 51 52.5	1	5.95	
Lacaille 8060	7.0	19 9 14.63	4	3.914	33 25		5.97	
d Sagittarii		19 9 26.44	1	3.516	19 11 53.8	1	5.98	
Lacaille 8066	7.0	19 9 59.18	2	3.919	— 33 25		6.03	
Weisse XIX, 224 . . .	7.2	19 10 7.36	1	3.054	+ 0 49		6.04	
Lacaille 8064	6.5	19 10 7.68	1	4.029	— 36 54		6.04	
Anonymous . . .	7.0	19 10 49.37	1	3.634	— 23 49		6.10	
ω Aquilæ	6.5	19 11 14.65	13	2.816	+ 11 21		6.13	
Dorpat 2492	5.5	19 11 25.05	1	+ 3.053	+ 0 50		+ 6.15	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
2141	θ	Lyræ	4.5	19 11 30.47	1	+ 2.082	+ 37 53		+ 6.16	
2142		Weisse XIX, 277 . . .	8.5	19 12 9.35		2.816	+ 11 23		6.21	
2143		B. A. C. 6604		19 12 11		3.650	— 24 27 3.7	1	6.21	
2144		Lacaille 8077	6.2	19 12 14.20	4	3.970	— 35 14		6.22	
2145	γ	Dorpat 2497, (1st star) .	8.3	19 13 7.62	1	2.953	+ 5 20		6.29	
2146		Dorpat 2197, (2d star) .	7.8	19 13 7.75	1	2.953	+ 5 20		6.29	
2147	ρ^1	Sagittarii	4.0	19 13 33.02	4	3.487	— 18 6 24.7	2	6.33	
2148	κ	Cygni		19 13 52.05	1	1.382	+ 53 7		6.35	
2149		Lacaille 8090	6.5	19 14 35.93	5	3.967	— 35 14		6.41	
2150		O. Arg. S. 19451 . . .	9.5	19 14 37.25	1	3.704	26 30		6.42	
2151		Dorpat 2501, (1st star) .	7.8	19 14 38.24	2	3.183	5 0		6.42	
2152		Dorpat 2501, (2d star) .	9.0	19 14 38.81	2	3.183	5 0		6.42	
2153		O. Arg. S. 19459 . . .	8.7	19 14 52.32	1	3.772	28 56		6.43	
2154		O. Arg. S. 19465 . . .	8.8	19 15 0.08	1	3.772	28 56		6.45	
2155		B. A. C. 6628	5.8	19 15 46.27	1	3.748	28 7 55.2	1	6.51	
2156		O. Arg. S. 19502 . . .	9.3	19 16 32.07	1	3.691	26 7		6.57	
2157	χ^1	Sagittarii	5.8	19 16 45.23	1	3.655	24 46 33.5	1	6.59	
2158	χ^2	Sagittarii	7.5	19 16 51.90	1	3.652	24 41		6.60	
2159	χ^3	Sagittarii	5.8	19 17 0.97	2	3.640	24 14		6.61	
2160		O. Arg. S. 19516 . . .	9.4	19 17 12.92	3	3.692	26 10		6.63	
2161		B. A. C. 6639	5.8	19 18 5.30	1	3.800	30 1		6.70	
2162		Gr. C. 1728	5.5	19 18 13.01	1	+ 3.417	— 15 20		6.71	
2163	τ	Draconis		19 18 13.72	1	— 1.074	+ 73 5		6.71	
		S. P.					40.1	2	6.71	
2164	δ	Aquilæ	3.2	19 18 26.34	10	+ 3.010	+ 2 50 20.3	11	6.73	
2165		Anonymous	9.2	19 18 47.49	2	3.690	— 26 8		6.76	
2166		O. Arg. S. 19551 . . .	8.5	19 18 47.56	2	3.692	26 13		6.76	
2167		Lacaille 8111		19 19 30		3.995	36 16 47.3	2	6.82	
2168		O. Arg. S. 19588 . . .	8.5	19 20 13.60	2	3.689	26 11		6.88	
2169		O. Arg. S. 19591 . . .	8.5	19 20 18.33	2	3.688	26 7		6.89	
2170		O. Arg. S. 19600 . . .	9.0	19 20 35.82	1	3.685	26 2		6.91	
2171		B. A. C. 6665	6.5	19 20 45.68	1	3.828	31 4		6.92	
2172		O. Arg. S. 19609 . . .	8.8	19 21 2.62	5	3.686	26 5		6.94	
2173		B. A. C. 6666	5.8	19 21 12.34	2	3.718	27 16		6.96	
2174		Lacaille 8126	6.7	19 21 54.29	1	3.885	32 59		7.02	
2175		Lacaille 8121	7.0	19 21 57.38	1	4.229	42 43		7.02	
2176		B. A. C. 6672	7.5	19 22 42.06	3	3.683	26 1 25.0	2	7.08	
2177		Anonymous	7.5	19 23 16.49	1	3.614	23 26		7.12	
2178	ε	Aquilæ	5.0	19 23 20.50	1	3.139	3 5		7.13	
2179		B. A. C. 6680	6.0	19 23 33.58	1	3.827	31 10		7.15	
2180		B. A. C. 6682	6.8	19 23 56.49	3	3.744	28 17		7.18	
2181		B. A. C. 6685	7.0	19 24 17.68	2	3.689	26 18		7.21	
2182		O. Arg. S. 19685 . . .	9.2	19 24 23.34	2	3.717	27 25		7.22	
2183		Lacaille 8138	6.0	19 24 31.97	1	4.132	40 19 49.96	1	7.25	
2184		O. Arg. S. 19695 . . .	9.2	19 25 17.34	3	3.716	27 27		7.29	
2185		Anonymous . . .	9.0	19 25 17.55	1	3.691	26 25		7.29	
2186		O. Arg. S. 19709 . . .	8.7	19 25 45.52	4	3.715	27 27		7.33	
2187		Anonymous	8.5	19 25 45.73	1	3.690	26 25		7.33	
2188		O. Arg. S. 19713 . . .	8.7	19 25 53.51	4	3.715	27 27		7.34	
2189		Anonymous	9.0	19 25 53.70	1	3.490	26 25		7.34	
2190		B. A. C. 6694	6.5	19 26 6.67	1	3.630	24 9 27.7	1	7.36	
2191		B. A. C. 6693	6.6	19 26 7.97	2	3.846	31 54		7.36	
2192		Lacaille 8153	7.5	19 26 36.84	1	4.012	— 37 6 27.8	1	7.40	
2193	μ	Aquilæ	5.0	19 27 14.98	1	2.918	+ 7 5		7.45	
2194	h^1	Sagittarii	6.0	19 27 31.40	2	3.651	— 25 1 18.1	2	7.47	
2195		Lacaille 8159	5.8	19 27 34.50	2	3.878	32 59		7.48	
2196		Lacaille 8158	7.5	19 27 53.10	1	4.179	41 45		7.50	
2197		Anonymous	8.5	19 27 56.10	1	4.182	41 50		7.51	6s. less than Lacaille.
2198	h^2	Sagittarii	6.0	19 28 11.10	2	3.655	25 11 19.9	2	7.53	
2199		Anonymous	8.0	19 28 37.96	1	4.076	39 3		7.56	
2200		Lacaille 8169	6.1	19 28 57.95	2	3.883	33 13		7.56	
2201		Weisse XIX, 722 . . .	6.0	19 29 9.25	2	3.306	10 28		7.61	
2202		Anonymous	7.7	19 29 19.89	1	3.653	24 40		7.62	
2203	κ	Aquilæ	5.3	19 29 21.46	8	3.231	7 20 6.5	2	7.62	
2204		Lacaille 8170	7.5	19 29 41.70	1	+ 4.125	— 41 5		+ 7.65	

	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
	B. A. C. 6716	6.6	19 30 11.74	2	+ 3.754	− 28 55		+ 7.69	
	Lacaille 8174		19 30 25		4.098	39 44 44.5	4	7.71	
53	Sagittarii	6.4	19 31 24.41	3	3.614	23 44 31.9	2	7.79	
	B. A. C. 6727		19 31 41.95	3	3.614	− 23 44 42.5	3	7.81	
	B. A. C. 6730	6.5	19 32 10.67	1	1.610	+ 49 55		7.85	
	Lacaille 8185	6.5	19 32 30.10	2	4.005	− 37 12		7.88	
θ	Cygni	5.5	19 32 41.06	1	1.612	+ 49 54		7.89	
	Lacaille 8186	6.6	19 32 55.08	2	3.996	− 36 57		7.91	
	Lacaille 8191	7.0	19 33 33.82	1	4.023	37 45 47.1	2	7.96	
	Anonymous		19 33 37.51	1	3.855	32 33		7.97	
	Lacaille 8193	7.0	19 33 45.10	2	3.973	36 18		7.98	
	B. A. C. 6738	6.3	19 33 52.58	2	3.649	25 11		7.99	
	Anonymous	7.2	19 34 9.21	1	3.597	23 10		8.01	
	Lacaille 8196	6.2	19 34 15.87	1	4.025	37 52 21.1	2	8.02	
	Lacaille 8197	6.4	19 34 45.65	2	4.172	− 41 56		8.06	
	Anonymous	9.2	19 35 54.68	1	2.899	+ 8 3		8.15	
	Dorpat 2562, (1st star)	8.9	19 35 58.13	4	2.899	8 3		8.16	
χ	Aquilæ	6.0	19 35 58.80	1	2.823	11 30		8.16	
	Dorpat 2562, (2d star)	7.8	19 35 59.88	5	2.899	+ 8 3		8.16	
	Anonymous	7.5	19 36 1.35	1	4.237	− 43 38		8.16	
	Anonymous	8.0	19 36 10.24	2	3.595	23 12		8.17	
	Anonymous		19 37 3		4.086	39 45 38.8	2	8.24	
	B. A. C. 6755	5.2	19 37 4.94	2	3.841	32 14 31.5	3	8.24	
	Lacaille 8209	6.8	19 37 35.74	2	4.234	43 40 48.0	2	8.28	
	Lacaille 8214	7.1	19 37 39.16	3	3.841	32 16 16.5	2	8.29	
	Anonymous	6.8	19 37 44.84	1	4.234	43 41		8.30	
f	Sagittarii		19 38 11.42	1	3.517	20 6		8.33	
	Anonymous	9.0	19 38 15.30	1	3.750	29 9 0.1	2	8.34	
	Anonymous	6.3	19 39 5.88	1	3.738	28 45		8.40	
	B. A. C. 6768		19 39 8		3.759	− 29 29		8.41	
γ	Aquilæ		19 39 36.20	10	2.852	+ 10 16 29.2	6	8.44	
	O. Arg. S. 19978	5.9	19 40 27.12	3	3.751	− 29 8		8.51	
	B. A. C. 6778	6.9	19 40 58.55	3	4.168	42 12		8.55	
	Anonymous		19 41 31		3.293	10 19 42.0	1	8.60	
	Lacaille 8237	6.9	19 41 44.49	2	4.176	− 42 26		8.61	
	O. Arg. N. 19614	9.0	19 41 46.08	1	1.127	+ 58 10		8.62	
	B. A. C. 6786	7.0	19 41 46.69	1	3.689	− 27 3 49.2	3	8.62	
	Lacaille 8238	7.5	19 41 52.93	2	3.990	37 15		8.62	
	B. A. C. 6792	6.3	19 42 32.18	2	3.708	27 49 20.8	2	8.68	
	Anonymous		19 42 34.86	1	4.039	38 44		8.68	
	B. A. C. 6795	6.8	19 43 3.91	3	3.697	27 26		8.72	
	Lacaille 8249	5.9	19 43 49.24	2	3.833	32 19 51.1	2	8.78	
α	Aquilæ		19 43 57.12	20	2.892	8 30 7.8	3	8.79	
	O. Arg. S. 20030	8.1	19 44 28.30	2	3.590	23 21		8.83	
	Lacaille 8253	7.5	19 44 57.20	1	3.954	36 20		8.87	
ι	Sagittarii	4.5	19 45 35.57	3	4.160	42 14		8.91	
	B. A. C. 6814	6.5	19 45 54.40	4	3.612	24 16		8.94	
	B. A. C. 6816	5.8	19 46 6.39	3	3.861	33 24 28.2	2	8.95	
56	Aquilæ	6.0	19 46 32.38	3	3.260	8 56		8.99	
	O. Arg. S. 20063	8.2	19 46 46.18	1	3.610	24 16		9.01	
ω	Sagittarii	5.5	19 47 15.55	1	3.671	26 40 1.3	1	9.05	
	Anonymous		19 47 18		4.065	39 45 2.3	1	9.05	
	Anonymous		19 47 56		4.063	39 45 1.7	1	9.10	
	B. A. C. 6829	6.0	19 48 0.17	1	3.786	30 56 12.4	2	9.11	
	B. A. C. 6831	7.5	19 48 18.94	1	3.588	− 23 26		9.13	
β	Aquilæ		19 48 26.14	7	+ 2.945	+ 6 3 34.4	5	9.14	
ε	Draconis		19 48 37.68	2	− 0.181	+ 69 54 41.0	4	9.15	
	O. Arg. S. 20086	9.2	19 48 37.75	1	+ 3.638	− 25 27		9.15	
	O. Arg. S. 20090	7.5	19 48 43.17	1	3.667	26 35		9.16	
	O. Arg. S. 20096		19 48 50		3.435	16 58 59.0	3	9.17	
	Lacaille 8278	6.5	19 48 58.88	3	3.969	37 3		9.18	
	O. Arg. S. 20101	9.0	19 48 59.62	1	3.640	25 33		9.18	
	Anonymous	9.0	19 49 26.97	1	3.664	17 29		9.22	
	B. A. C. 6841	6.5	19 50 7.60	1	3.782	30 54 33.7	1	9.27	
A	Sagittarii	5.8	19 50 25.03	1	+ 3.665	− 26 34 14.7	1	+ 9.29	

Number.	Name.	Magnitude.	Right Ascensions. 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
2270	Lacaille 8287	6.5	19 50 25.78	1	+ 3.989	− 37 45		+ 9.29	
2271	B. A. C. 6844	6.0	19 50 41.69	1	4.192	43 25		9.21	
2272	Lacaille 8296	5.6	19 51 18.55	3	3.871	34 3		9.36	
2273	Lacaille 8302	6.8	19 51 44.80	1	3.826	32 33		9.39	
2274	B. A. C. 6854	6.7	19 51 55.78	3	3.725	28 57 54.5	2	9.41	
2275	B. A. C. 6864	6.0	19 53 4.40	3	3.575	23 10 33.2	1	9.50	
2276	Weisse XIX, 1319 . . .	7.6	19 53 15.06	2	3.372	14 19		9.51	
2277	Weisse XIX, 1320 . . .	9.3	19 53 16.35	1	3.373	14 20		9.51	
2278	Lacaille 8307	7.0	19 53 34.10	2	4.082	43 19		9.54	
2279	c Sagittarii	5.6	19 54 2.67	4	3.699	28 5 42.1	2	9.57	
2280	Lacaille 8309		19 54 .13		4.031	39 14 13.1	2	9.58	
2281	Lacaille 8313	6.5	19 54 19.65	1	3.956	36 59		9.59	
2282	Lacaille 8312	6.4	19 54 19.79	2	3.986	37 54		9.59	
2283	B. A C. 6878	6.5	19 55 26.21	5	3.569	22 59 4.8	2	9.68	
2284	B. A. C. 6877	5.5	19 55 26.43	1	3.817	32 27		9.68	
2285	O. Arg. S. 20194 . . .		19 55 50		3.697	28 8 9.2	2	9.71	
2286	Lacaille 8326	6.6	19 56 5.93	3	3.944	36 44		9.73	5.6s. less than Lacaille.
2287	B. A. C. 6887	7.1	19 56 38.18	3	3.732	29 28 4.6	2	9.77	
2288	B. A. C. 6888	6.6	19 56 39.21	3	3.672	− 27 13		9.77	
2289	τ Aquilæ		19 57 18.00	1	2.931	+ 6 53 9.2	3	9.82	
2290	Anonymous		19 58 27:		3.621	− 25 18 25.9	1	9.91	
2291	B. A. C. 6899	6.5	19 58 40.99	1	3.746	30 7 13.4	1	9.93	
2292	O. Arg. S. 20246 . . .		19 59 19		3.595	24 16 53.1	2	9.98	
3293	Anonymous		19 59 51		4.014	39 7 28.6	1	10.02	
2294	B. A. C. 6920		20 1 40		3.629	25 41 25.2	3	10.15	
2295	O. Arg. S. 20287 . . .		20 3 5		3.599	24 38 10.7	2	10.26	
2296	Anonymous		20 3 35		3.307	9 15 12.4	2	10.30	
2297	O. Arg. S. 20297 . . .		20 3 37		+ 3.599	− 24 41 23.7	2	10.30	
2298	λ Ursæ Minoris		20 3 53		−56.111	+ 88 53 23.7	7	10.32	
2399	O. Arg. S. 20309 . . .	8.2	20 4 22.98	1	+ 3.611	+ 25 13		10.36	
2300	Lacaille 8373		20 4 43		3.859	− 34 32 4.9	1	10.38	
2301	Dorpat 2643	7.3	20 5 28.24	4	3.140	3 25		10.44	
2302	B. A. C. 6947	6.2	20 6 33.32	4	3.663	27 26 49.9	2	10.52	
2303	B. A. C. 6948	6.4	20 7 8.20	2	3.740	30 26		10.56	
2304	Lacaille 8385	6.0	20 7 16.39	2	3.924	36 52 38.4	2	10.57	Perhaps 31″.3 further north.
2305	Lacaille 8387	6.0	20 7 24.79	1	3.886	35 38		10.58	
2306	Anonymous		20 7 51		4.004	39 25 35.5	1	10.62	
2307	Anonymous		20 7 51		3.583	24 15 33.2	4	10.62	
2308	Lacaille 8374	7.0	20 8 14.25	1	3.769	31 37 54.5	2	10.65	
2309	O. Arg. S. 20370 . . .	8.9	20 9 44.54	2	3.609	25 27		10.76	
2310	α^1 Capricorni		20 9 53.09	3	3.331	12 56 15.1	4	10.77	
2311	α^2 Capricorni		20 10 17.04	20	3.332	12 58 31.5	5	10.79	
2312	O Arg. S. 20384 . . .		20 10 35		3.581	24 19 36.0	4	10.82	
2313	Anonymous		20 11 7		3.709	29 33 58.8	1	10.86	
2314	Lacaille 8403	6.7	20 11 8.15	1	3.804	33 3 4.5	2	10.86	
2315	Lacaille 8404	6.2	20 11 15.73	1	3.859	35 1		10.87	
2316	O. Arg. S. 20393 . . .	8.8	20 11 17.14	2	3.598	25 6		10.87	
2317	B. A. C. 6982	7.0	20 11 22.15	3	3.611	25 39 26.3	2	10.88	
2318	O. Arg. S. 20398 . . .		20 11 37		3.709	29 34 0.6	1	10.89	
2319	B. A. C. 6984		20 11 44		3.710	29 37 59.8	1	10.90	
2320	Lacaille 8414	7.0	20 12 21.41	3	3.804	33 10 32.1	2	10.95	
2321	O. Arg. S. 20429 . . .	7.6	20 13 11.86	2	+ 3.568	− 23 55		11.01	
2322	κ Cephei, (1st star) . . .		20 13 32		− 1.877	+ 77 17 17.0	3	11.04	
2323	κ Cephei, (2d star) . . .		20 13 32		− 1.877	+ 77 17 13.4	2	11.04	
2324	O. Arg. S. 20443 . . .	8.2	20 14 23.33	2	+ 3.540	− 22 47		11.10	
2325	Anonymous		20 14 40		3.601	25 25 54.8	1	11.12	
2326	Lacaille 8421	7.0	20 14 45.43	1	3.868	35 34		11.13	
2327	B. A. C. 7011	6.3	20 16 6.36	3	3.699	29 31 26.5	2	11.22	
2328	B. A. C. 7012	6.4	20 16 11.56	3	3.619	26 16 52.0	3	11.23	
2329	O. Arg. S. 20469 . . .	9.0	20 16 15.87	4	3.588	24 59		11.23	
2330	O. Arg. S. 20473 . . .	8.9	20 16 25.07	4	3.588	25 0		11.24	
2331	B. A. C. 7018	6.2	20 16 52.08	2	3.688	29 7		11.28	
2332	Lacaille 8432	7.2	20 17 3.75	1	3.820	34 5		11.29	
2333	B. A. C. 7021	6.9	20 17 21.16	2	3.635	27 1		11.31	
2334	Anonymous	9.0	20 17 22.40	2	+ 3.523	− 22 13		+ 11.31	

Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
		h. m. s.		s.	° ′ ″		″	
Lacaille 8439		20 17 38		+ 3.782	− 32 46 53.3	1	+ 11.33	
B. A. C. 7026	6.6	20 17 56.97	4	3.696	29 31 31.2	3	11.35	
O. Arg. S. 20502	8.5	20 18 45.09	3	3.586	25 5		11.41	
B. A. C. 7030	7.2	20 18 54.03	1	3.688	29 16		11.43	
π Capricorni		20 19 17		3.443	18 40 2.2	2	11.45	
B. A. C. 7033	7.1	20 19 29.59	1	3.701	29 50		11.47	
B. A. C. 7034	7.1	20 19 37.40	2	3.608	26 3 55.6	1	11.48	
Lacaille 8450	6.3	20 19 37.52	1	3.836	34 53		11.48	
B. A. C. 7036		20 19 47		3.870	36 3 15.6	2	11.49	
B. A. C. 7039	6.5	20 20 10.02	2	3.573	24 37 6.3	2	11.52	
B. A. C. 7040	6.6	20 20 25.89	3	3.569	24 26		11.54	
ρ Capricorni		20 20 52.28	13	3.433	18 16 23.2	1	11.56	
B. A. C. 7049	6.5	20 21 18.15	2	3.532	22 51 8.4	2	11.60	
B. A. C. 7057	6.1	20 22 21.95	3	3.689	29 34 40.0	2	11.67	
O. Arg. S. 20575	8.2	20 23 49.14	3	3.674	29 4		11.78	
Anonymous	7.0	20 23 58.46	1	3.578	25 4		11.79	
O. Arg. S. 20578	7.1	20 23 58.48	4	3.585	25 21		11.79	
Lacaille 8476	7.1	20 24 0.68	4	3.744	31 51		11.79	
B. A. C. 7069	7.5	20 24 1.38	4	3.522	22 37 26.8	4	11.79	
B. A. C. 7070	7.8	20 24 3.55	4	3.522	22 37 52.3	2	11.79	
B. A. C. 7071	7.0	20 24 9.61	3	3.673	29 3 55.2	2	11.80	
Lacaille 8476		20 24 11		3.744	31 51 8.5	2	11.80	
B. A. C. 7077	6.2	20 24 31.81	2	3.278	10 47		11.83	
B. A. C. 7081	7.2	20 25 19.95	2	3.522	22 42 8.3	4	11.88	
Lacaille 8487	5.8	20 25 47.63	1	3.929	38 34		11.91	
Lacaille 8492	6.2	20 26 8.87	3	3.716	− 30 57		11.94	
ε Delphini		20 26 31.43	7	2.867	+ 10 49 47.7	1	11.97	
B. A. C. 7093	6.6	20 27 27.91	4	3.623	− 27 15 13.4	1	12.03	
Lacaille 8497	6.3	20 28 23.17	1	4.022	41 42 30.7	2	12.10	
B. A. C. 7108	6.2	20 29 31.70	4	3.580	25 35 34.2	2	12.18	
B. A. C. 7111	6.9	20 29 32.09	3	3.521	22 55 39.2	1	12.18	
B. A. C. 7113	6.5	20 29 47.37	6	+ 3.561	− 24 42 46.3	2	12.20	
B. A. C. 7124		20 30 35.93		− 0.198	+ 72 3 25.4	5	12.25	
Lacaille 8513		20 31 25		+ 3.847	− 36 17 19.0	1	12.31	
Lacaille 8517	5.7	20 31 32.27	3	3.782	33 55		12.31	
Lacaille 8512	5.8	20 31 38.85	1	4.052	42 53		12.32	
Anonymous		20 31 50		3.389	16 43 57.4:	1	12.34	
B. A. C. 7128	6.5	20 31 51.56	2	3.548	24 17		12.34	
B. A. C. 7133	6.7	20 32 4.46	5	3.554	24 35 52.2	2	12.35	
B. A. C. 7135	6.7	20 32 8.52	1	3.633	28 4 41.1	2	12.36	
B. A. C. 7136		20 32 11		3.612	27 8 9.0	1	12.36	
B. A. C. 7139		20 32 22		3.656	29 2 28.3	1	12.37	
Lacaille 8529	6.3	20 32 42.23	1	3.731	32 4		12.40	
B. A. C. 7147	6.5	20 33 2.48	2	3.595	26 29		12.42	
Anonymous	6.5	20 33 2.55	1	3.585	26 3		12.42	
B. A. C. 7155	6.0	20 33 42.08	1	3.953	40 3		12.46	
Lacaille 8537	6.4	20 34 44.16	3	3.673	29 54		12.53	
B. A. C. 7162	6.6	20 35 16.09	4	3.514	22 57 8.2	1	12.57	
Lacaille 8539	6.7	20 35 23.44	4	3.733	32 25		12.58	
Lacaille 8540	6.5	20 35 45.98	1	3.837	36 19 44.4	1	12.60	
B. A. C. 7168	6.5	20 36 6.94	2	3.641	28 42		12.63	
Anonymous		20 36 20		3.817	− 35 40 6.9	1	12.64	
α Cygni		20 36 39.59	7	2.043	+ 44 46 54.3	3	12.67	
B. A. C. 7170	6.1	20 36 48.47	3	3.617	− 27 45		12.68	
Lacaille 8546	6.7	20 36 48.72	1	3.694	30 59		12.68	
O. Arg. S. 20802	8.6	20 36 48.80	2	3.539	24 16		12.68	
O. Arg. S. 20805	7.3	20 37 4.32	1	3.541	24 23		12.69	
Anonymous	9.0	20 37 4.36	1	3.608	27 23		12.69	
B. A. C. 7175		20 37 12		3.931	39 42 14.4	1	12.70	
Lacaille 8549	6.0	20 37 22.84	1	3.845	36 47		12.71	
ψ Capricorni	4.5	20 37 47.88	2	3.570	25 46 14.6	3	12.74	
O. Arg. S. 20817	8.2	20 37 59.07	2	3.538	24 18		12.76	
B. A. C. 7180	7.2	20 38 3.27	5	3.536	24 14		12.76	
Anonymous	9.0	20 38 4.12	1	3.606	27 23		12.76	
B. A. C. 7181	7.0	20 38 4.22	2	+ 3.606	− 27 23		+ 12.76	

Number.	Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
2400	O. Arg. S. 20828	7.2	20 38 15.90	1	+ 3.614	− 27 44		+ 12.78	
2401	O. Arg. S. 20833	7.0	20 38 20.98	1	3.613	27 41		12.78	
2402	B. A. C. 7187	6.8	20 38 58.55	2	3.594	26 55		12.82	
2403	Lacaille 8559	6.9	20 39 12.68	2	4.047	43 31		12.84	
2404	ε Aquarii		20 40 5.58		3.253	− 10 0		12.90	
2405	γ Delphini, (1st star)		20 40 8.95	1	2.786	+ 15 37		12.90	
2406	γ Delphini, (2d star)		20 40 9.88	1	2.786	+ 15 37		12.90	
2407	B. A. C. 7197	6.7	20 40 11.13	3	3.512	− 23 15		12.90	
2408	O. Arg. S. 20857		20 40 17		3.497	22 35 15.5	1	12.91	
2409	O. Arg. S. 20859		20 40 17		3.389	17 14 55.2	2	12.91	
2410	B. A. C. 7203		20 40 43		3.612	27 52 57.5	3	12.94	
2411	Lacaille 8574	6.6	20 40 44.13	1	3.679	30 42		12.94	
2412	B. A. C. 7205	6.0	20 40 58.71	1	3.576	26 18		12.96	
2413	α Microscopii	5.0	20 41 12.72	1	3.768	34 18		12.97	
2414	B. A. C. 7210	7.2	20 41 41.41	5	3.610	27 53		13.00	
2415	Anonymous	9.0	20 41 42.69	2	3.610	27 53		13.01	
2416	O. Arg. S. 20884		20 41 47		3.491	22 24 35.0	1	13.01	
2417	Lacaille 8585	6.8	20 42 0.91	1	3.713	32 15		13.03	
2418	B. A. C. 7216	6.2	20 42 14.57	4	3.557	25 29 45.4	2	13.04	
2419	Lacaille 8586	6.6	20 42 28.32	2	3.967	41 25		13.06	
2420	Anonymous		20 43 2		3.397	17 48 37.3	4	13.09	
2421	B. A. C. 7225	7.0	20 43 10.72	1	3.605	27 46		13.10	
2422	Lacaille 8596		20 43 12		3.655	29 57 28.8	2	13.10	
2423	β Microscopii	6.5	20 43 16.32	1	3.747	33 42		13.11	
2424	α Capricorni	5.0	20 43 27.55	3	3.597	27 26 21.6	1	13.12	
2425	Lacaille 8603	7.0	20 44 22.40	2	3.966	41 35		13.18	
2426	Lacaille 8608	6.9	20 44 34.13	1	3.702	32 2		13.19	
2427	B. A. C. 7237	6.1	20 44 48.10	3	3.526	24 18 16.2	2	13.21	
2428	μ Aquarii		20 45 6.01	14	3.240	9 30 20.5	1	13.23	
2429	Lacaille 8616	6.5	20 45 42.39	1	3.615	28 26		13.27	
2430	B. A. C. 7244	6.6	20 45 47.46	2	3.535	24 49		13.28	
2431	O. Arg. S. 20937	7.2	20 46 11.61	1	3.614	28 27		13.30	
2432	Anonymous	7.8	20 47 5.54	1	3.532	24 46		13.36	
2433	O. Arg. S. 20951		20 47 7		3.354	15 48 41.2	1	13.36	
2434	Lacaille 8619	7.1	20 47 13.93	5	3.697	32 4 58.8	1	13.37	
2435	Anonymous	7.2	20 47 18.81	5	3.695	32 1		13.37	
2436	Lacaille 8620	6.0	20 48 22.88	2	4.050	44 36		13.44	
2437	B. A. C. 7252	6.1	20 48 27.80	5	3.574	− 26 49 37.7	2	13.45	
2438	32 Vulpeculæ		20 48 35.60	7	2.555	+ 27 32		13.46	
2439	Lacaille 8628	7.5	20 50 40.45	1	4.006	− 43 33		13.59	
2440	Lacaille 8630	5.9	20 51 8.78	2	3.803	36 40		13.62	
2441	Lacaille 8633	7.7	20 52 5.38	1	3.871	39 16		13.68	
2442	Anonymous		20 52 29		+ 3.774	− 35 43 8.3	1	13.71	
2443	76 Draconis		20 52 29		− 3.882	+ 82 0 35.4	2	13.71	
2444	Lacaille 8640	6.9	20 52 35.36	2	+ 3.642	− 30 16 14.5	1	13.72	
2445	O. Arg. S. 21030	7.3	20 52 38.43	1	3.642	30 17		13.72	
2446	1 Piscis Australis	5.5	20 52 41.63	2	3.700	32 48 5.4	2	13.72	
2447	Anonymous	7.0	20 52 42.36	1	4.001	43 37		13.72	
2448	Lacaille 8638		20 52 55.70	1	3.997	43 31		13.74	
2449	Anonymous		20 53 0.71	1	3.998	43 34		13.74	
2450	Lacaille 8647	7.1	20 53 10.99	5	3.597	28 21		13.75	
2451	B. A. C. 7287	6.2	20 53 26.26	3	3.577	27 26		13.77	
2452	B. A. C. 7286	5.8	20 53 27.87	1	+ 3.861	− 39 4		13.77	
2453	B. A. C. 7299		20 53 49		− 2.448	+ 80 1 30.4	4	13.79	
2454	O. Arg. S. 21046	8.5	20 54 0.34	1	+ 3.421	− 19 47		13.81	
2455	B. A. C. 7292	5.8	20 54 0.50	3	3.862	39 10		13.81	
2456	Lacaille 8658	8.0	20 54 31.07	1	3.623	29 39		13.84	
2457	O. Arg. S. 21053	8.4	20 54 47.40	2	3.420	19 48		13.86	
2458	Lacaille 8660	5.8	20 54 48.81	4	3.592	28 17		13.86	
2459	B. A. C. 7300	7.1	20 55 4.26	4	3.535	25 37 23.7	3	13.87	
2460	B. A. C. 7312		20 57 0		3.378	17 42 59.4	3	14.00	
2461	Lacaille 8677	7.2	20 57 11.92	2	3.787	36 46		14.01	
2462	δ Microscopii	5.6	20 57 33.40	3	3.639	30 41		14.03	
2463	Lacaille 8681	6.5	20 57 36.67	1	3.745	35 11 4.5	2	14.03	
2464	Anonymous	7.3	20 57 36.79	1	+ 3.690	− 32 54		+ 14.03	

Number.		Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
2465	2	Piscis Australis . . .	5. 7	20 57 50. 42	3	+ 3. 690	— 32 54		+ 14. 05	
2466	θ	Capricorni		20 58 4		3. 378	17 47 11. 5	3	14. 06	
2467		Lacaille 8686		20 58 35		3. 848	39 14 57. 4	2	14. 09	
2468		O. Arg. S. 21106 . . .	6. 8	20 58 43. 88	2	3. 500	23 46		14. 10	
2469		B. A. C. 7327	6. 8	20 58 55. 68	3	3. 489	23 42 58. 9	1	14. 11	
2470	A	Capricorni	5. 4	20 58 55. 96	3	3. 526	25 33 44. 1	1	14. 11	
2471		Lacaille 8691		20 59 3. 98		3. 574	27 50 56. 9	2	14. 12	
2472		Lacaille 8693	6. 6	20 59 51. 06	1	3. 806	37 48 14. 5	1	14. 17	
2473		Lacaille 8697	6. 5	21 0 25. 89	1	3. 823	38 30		14. 21	
2474		Lacaille 8701		21 0 36. 66	1	3. 595	— 29 1		14. 22	
2475	61^{1}	Cygni		21 0 37. 37	1	2. 334	+ 38 4		14. 22	
2476		Anonymous	6. 0	21 0 50. 59	1	3. 681	— 32 54		14. 23	
2477		B. A. C. 7340	7. 8	21 1 4. 54	3	3. 495	24 11 26. 4	1	14. 25	
2478		Lacaille 8707	6. 5	21 1 41. 01	3	3. 620	30 18		14. 29	
2479		Lacaille 8706	6. 7	21 1 46. 28	1	3. 691	33 25		14. 29	
2480	ν	Aquarii	4. 5	21 1 57. 87	7	3. 270	11 56		14. 30	
2481		B. A. C. 7347	7. 4	21 2 26. 17	2	3. 468	22 58		14. 33	
2482		Lacaille 8722	6. 8	21 4 3. 47	2	3. 755	36 19 57. 2	1	14. 43	
2483		Lacaille 8719		21 4 5		3. 851	39 59 31. 4	2	14. 43	
2484		Anonymous		21 4 20:		3. 738	35 42 16. 0:	1	14. 45	
2485	3	Piscis Australis . . .	5. 4	21 4 58. 75	4	3. 567	28 11		14. 49	
2486		B. A. C. 7359	7. 2	21 5 8. 81	2	3. 511	25 25		14. 50	
2487		Lacaille 8736	7. 0	21 5 36. 08	2	3. 610	30 14		14. 52	
2488		Lacaille 8740		21 5 59		3. 458	22 47 8. 7	1	14. 55	
2489		B. A. C. 7366	7. 3	21 6 32. 94	1	3. 529	— 26 29		14. 58	
2490	ζ	Cygni		21 6 58. 69	18	2. 550	+ 29 39 17. 4	1	14. 61	
2491		Lacaille 8742	6. 0	21 7 3. 07	1	3. 757	— 36 47		14. 61	
2492		Anonymous		21 7 26		3. 329	15 42 11. 3	1	14. 63	
2493		Anonymous		21 7 41		3. 331	15 50 40. 4	1	14. 65	
2494	29	Capricorni		21 8 0		3. 329	15 45 2. 4	3	14. 67	
2495		Lacaille 8758	6. 6	21 9 0. 22	3	3. 625	31 19		14. 73	
2496		Lacaille 8760	6. 7	21 9 1. 78	1	3. 816	39 22		14. 73	
2497	4	Piscis Australis . . .	5. 4	21 9 26. 30	4	3. 655	32 45		14. 75	
2498		Lacaille 8769	6. 3	21 10 37. 39	3	3. 577	29 20		14. 82	
2499		Lacaille 8776	6. 4	21 11 36. 98	4	3. 544	27 47 47. 9	2	14. 88	
2500		Lacaille 8777	6. 6	21 11 39. 34	4	3. 527	26 54		14. 88	
2501	θ^{1}	Microscopii	5. 5	21 11 47. 40	1	3. 862	41 24		14. 89	
2502		Lacaille 8787	6. 6	21 13 29. 88	5	3. 580	29 45 26. 1	1	14. 99	
2503		Lacaille 8790	6. 9	21 14 21. 10	3	3. 583	30 1 45. 1	1	15. 04	
2504	ι	Capricorni		21 14 26. 83	4	3. 350	17 25 40. 8	3	15. 05	
2505		Lacaille 8791	7. 5	21 14 48. 91	1	3. 770	38 20		15. 07	
2506		B. A. C. 7413	6. 0	21 14 58. 57	1	3. 451	— 23 16		15. 08	
2507	α	Cephei		21 15 14. 16	6	1. 416	+ 61 59 37. 8	1	15. 09	
2508	1	Pegasi		21 15 36. 81	3	2. 766	+ 19 12 28. 0	2	15. 11	
2509		B. A. C. 7419		21 15 47. 60	3	3. 496	— 25 47 54. 0	2	15. 12	
2510		B. A. C. 7422	7. 3	21 16 6. 12	1	3. 502	26 9		15. 14	
2511		B. A. C. 7426	6. 6	21 16 14. 71	2	3. 481	25 1		15. 15	
2512		B. A. C. 7432	5. 9	21 17 37. 07	1	3. 762	38 26		15. 23	
2513		B. A. C. 7434	7. 0	21 17 40. 56	4	3. 493	25 50 20. 0	2	15. 23	
2514	19	Aquarii	6. 0	21 17 41. 49	2	3. 221	10 21		15. 23	
2515		B. A. C. 7436	6. 4	21 17 44. 69	3	3. 467	24 25 19. 0	2	15. 24	
2516		B. A. C. 7442	6. 9	21 18 2. 50	2	3. 478	25 5		15. 25	
2517		O. Arg. S. 21382 . . .	9. 0	21 18 13. 99	1	3. 478	25 5		15. 26	
2518	ζ	Capricorni		21 18 40. 04	1	3. 439	23 1		15. 29	
2519		Lacaille 8821	6. 9	21 19 19. 37	3	3. 537	28 19		15. 33	
2520		Anonymous	8. 0	21 19 20. 77	1	3. 384	19 54		15. 33	
2521	5	Piscis Australis . . .	6. 4	21 20 41. 26	5	3. 604	31 51		15. 40	
2522		Lacaille 8827	7. 2	21 21 8. 74	2	3. 747	38 18		15. 43	
2523		B. A. C. 7467	7. 5	21 22 20. 34	3	3. 482	25 48		15. 49	
2524		Lacaille 8834	6. 7	21 22 37. 28	3	3. 491	26 19		15. 51	
2525		O. Arg. S. 21443 . . .		21 23 34		3. 423	22 37 25. 2	4	15. 56	
2526	β	Aquarii		21 24 11. 17	22	3. 163	6 11		15. 60	
2527		B. A. C. 7479	6. 5	21 24 28. 87	3	3. 467	25 12		15. 61	
2528		O. Arg. S. 21445 . . .		21 24 45		3. 481	26 1 33. 9	1	15. 63	
2529		Anonymous	7. 5	21 25 21. 28	1	+ 3. 457	— 24 45		+ 15. 66	

Number.	Name.		Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		s.	
2530		Lacaille 8846		21 26 3.98	1	+ 3.705	— 37 16		+ 15.70	
2531		Lacaille 8849	6.0	21 26 36.86	1	3.577	— 30 18 56.0	2	15.73	
2532		Anonymous	8.0	21 26 48.05	1	0.801	+ 69 56 44.2	1	15.74	Companion of β Cephei.
2533	β	Cephei		21 26 50.40	14	0.802	+ 69 56 48.2	6	15.74	
2534		B. A. C. 7492	6.3	21 27 15.04	3	3.441	— 24 4 27.7	2	15.76	
2535	8	Piscis Australis . . .	5.9	21 28 3.52	2	3.488	26 48		15.81	
2536	ε	Capricorni		21 29 14.17	1	3.371	20 5		15.87	
2537		Lacaille 8863	7.1	21 30 6.55	4	3.470	26 4 19.2	2	15.92	
2538		Lacaille 8862	6.6	21 30 9.41	2	3.547	30 16 6.2	2	15.92	
2539	ξ	Aquarii		21 30 17.78	12	3.193	8 28 47.4	2	15.93	
2540		Anonymous	6.5	21 30 20.36	1	3.754	40 10		15.93	
2541		B. A. C. 7523	7.5	21 30 56.49	1	3.451	25 5		15.96	
2542		Lacaille 8870	6.6	21 30 58.05	3	3.501	27 55 55.6	2	15.96	
2543		Lacaille 8873	7.5	21 32 1.20	1	3.638	35 9		16.02	
2544	γ	Capricorni		21 32 19.84	1	3.322	17 18		16.03	
2545		Anonymous	6.0	21 33 17.96	1	3.593	33 8		16.08	
2546		Lacaille 8890	6.4	21 33 44.31	4	3.456	25 44 8.8	1	16.11	
2547		Lacaille 8889	6.3	21 33 52.09	1	3.592	33 9		16.11	
2548		Lacaille 8891	8.0	21 33 56.65	1	3.501	28 19		16.12	
2549		Lacaille 8892	7.4	21 34 0.54	3	3.459	26 30		16.12	
2550		O. Arg. S. 21575 . . .	7.1	21 34 4.10	2	3.496	28 6		16.13	
2551		B. A. C. 7549	7.2	21 35 21.23	3	3.436	24 47		16.19	
2552	45	Capricorni		21 36 20		3.302	16 23 18.3	2	16.24	
2553		Lacaille 8902	6.6	21 36 31.56	3	3.446	— 25 32 49.2	2	16.25	
2554	ε	Pegasi		21 37 18.56	13	2.945	+ 9 14 6.7	7	16.29	
2555		Lacaille 8907	7.0	21 37 20.81	3	3.500	— 28 46 4.7	1	16.29	
2556		Lacaille 8906	7.9	21 37 23.18	2	3.511	29 22		16.30	
2557		B. A. C. 7562		21 37 27.13	1	3.205	9 41		16.30	
2558	c¹	Capricorni		21 37 32.30	1	3.205	9 43		16.30	
2559		Lacaille 8911	6.4	21 38 4.52	2	3.583	33 21		16.33	
2560	δ	Capricorni		21 39 18.53	1	3.304	16 46		16.39	
2561	θ	Piscis Australis . . .	5.7	21 39 30.71	1	3.544	31 32		16.40	
2562		Lacaille 8918	6.6	21 39 35.03	4	3.487	— 28 23 42.2	2	16.41	
2563	11	Cephei		21 39 44.33	1	0.884	+ 70 40 2.8	1	16.42	
2564		Lacaille 8923	7.1	21 40 7.59	5	3.455	— 26 31		16.43	
2565		Lacaille 8929	7.8	21 41 29.47	2	3.693	39 15 27.6	1	16.50	
2566		Lacaille 8934	6.6	21 41 48.86	2	3.476	28 3		16.52	
2567		Anonymous		21 42 5		3.489	28 51 25.0	1	16.53	
2568		O. Arg. S. 21677 . . .	7.2	21 42 30.24	1	3.473	27 59		16.55	
2569		Lacaille 8937	7.1	21 42 40.49	4	3.483	28 35 2.4	3	16.56	
2570		Lacaille 8941	6.8	21 43 26.25	2	3.405	23 55 10.9	2	16.60	
2571		Lacaille 8945	8.8	21 44 18.31	1	3.627	36 39		16.64	
2572		Anonymous	8.7	21 44 20.47	1	3.340	19 48		16.64	
2573		Lacaille 8947	8.3	21 44 25.59	3	3.468	27 57		16.65	
2574		O. Arg. S. 21710 . . .	8.0	21 45 15.54	2	3.339	19 48		16.69	
2575	μ	Capricorni	4.8	21 45 39.54	10	3.259	14 12 30.7	2	16.71	
2576		Lacaille 8952	7.0	21 45 54.62	1	3.622	36 41		16.72	
2577		B. A. C. 7630		21 47 22		3.280	15 54 59.8	2	16.79	
2578		Lacaille 8965		21 47 45.20	2	3.515	31 15 57.6	2	16.81	
2579		B. A. C. 7632	5.9	21 47 56.46	4	3.640	37 55		16.82	
2580		Lacaille 8967	8.0	21 48 34.36	1	3.599	35 59		16.85	
2581		Lacaille 8968	7.2	21 49 2.26	4	3.443	— 27 8 23.8	2	16.87	
2582	79	Draconis		21 51 7.65	1	0.735	+ 73 2 26.1	6	16.97	
2583		O. Arg. S. 21772 . . .	8.2	21 51 18.05	4	3.397	— 24 33		16.98	
2584		Lacaille 8982	7.0	21 51 23.59	5	3.396	24 30		16.98	
2585		B. A. C. 7652	6.8	21 51 25.05	2	3.382	23 32		16.98	
2586		Lacaille 8981	7.4	21 51 26.28	2	3.478	29 43		16.98	
2587	11	Piscis Australis . . .	6.8	21 51 32.82	2	3.455	28 17 50.8	1	16.99	
2588		Lacaille 8985	7.2	21 51 45.30	1	3.519	32 11		17.00	
2589		Lacaille 8989	6.0	21 52 46.15	1	3.462	28 59		17.04	
2590	η	Piscis Australis . . .		21 52 47		3.464	29 7 25.7	2	17.04	
2591		Lacaille 9000	6.4	21 54 22.48	2	3.522	32 51		17.12	
2592		O. Arg. S. 21821 . . .		21 54 28		3.306	18 34 24.2	2	17.12	
2593		Lacaille 9003	6.7	21 54 41.65	3	3.443	28 2 20.2	2	17.13	
2594		Lacaille 9005	7.5	21 55 9.68	5	+ 3.435	— 27 43 27.6	2	+ 17.15	

	Name.	Magnitude.	Right Ascensions, 1860. 0.	No. of obs.	Precession.	Declinations, 1860. 0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″			
	Lacaille 9004	7.7	21 55 10.74	4	+ 3.481	— 30 34		+ 17.15	
13	Piscis Australis . . .	6.6	21 56 19.01	4	3.478	30 26		17.21	
	Lacaille 9012	6.2	21 56 37.79	1	3.454	29 6 36.5	1	17.22	
α	Aquarii		21 58 35.50	13	3.084	0 59 54.0	5	17.31	
ι	Aquarii		21 58 52.35	1	3.247	14 32 48.4	2	17.32	
	B. A. C. 7694	6.6	21 59 26.66	2	3.356	22 55 17.6	1	17.34	
	Lacaille 9027	7.2	21 59 45.21	2	3.385	25 5		17.36	
	O. Arg. S. 21904 . . .		22 0 1		3.253	15 9 58.5	1	17.37	
	O. Arg. S. 21910 . .	7.4	22 0 24.32	2	3.374	24 25		17.39	
	Lacaille 9038	6.9	22 1 38.43	7	3.371	24 20		17.44	
	Lacaille 9036	5.5	22 1 44.36	1	3.529	34 41		17.44	
	B. A. C. 7715	6.4	22 2 0.76	4	3.437	28 58 43.1	2	17.46	
	Lacaille 9046	6.3	22 3 26.05	1	3.530	35 9		17.52	
	B. A. C. 7729	6.9	22 3 30.78	2	3.416	27 50 18.6	2	17.52	
	Lacaille 9047	6.7	22 3 41.57	1	3.598	38 59		17.53	
	Lacaille 9058	6.3	22 4 3.66	3	3.402	27 1		17.54	
	B. A. C. 7739	7.0	22 4 41.40	2	3.412	27 46 25.1	1	17.57	
	Lacaille 9058 . . .	6.0	22 5 3.67	1	3.400	27 1		17.59	
	B. A. C. 7745	6.3	22 5 52.06	4	3.382	25 52		17.62	
λ	Piscis Australis . . .	6.1	22 6 22.16	5	3.417	28 27		17.64	
	Weisse XXII, 118 . .		22 7 3		3.251	15 47 26.5	2	17.67	
	Anonymous	8.5	22 7 52.61	1	3.472	— 32 30		17.70	
	Weisse XXII, 155 . . .	8.5	22 8 28.98	1	3.069	+ 0 17		17.73	
θ	Aquarii		22 9 26.62	13	3.164	— 8 28 43.3	4	17.77	
	Lacaille 9088	7.2	22 9 34.66	1	3.466	32 28		17.77	
	Lacaille 9091	7.2	22 10 3.64	1	3.542	37 18		17.79	
	Lacaille 9093	7.4	22 10 26.12	2	3.333	22 59 47.6	2	17.81	
	Lacaille 9097	6.7	22 11 24.68	4	3.409	28 54		17.85	
ρ	Aquarii		22 12 49.75	1	3.162	8 31 21.5	1	17.90	
	Lacaille 9109	7.0	22 14 5.89	1	3.364	26 3		17.95	
γ	Aquarii		22 14 25.46	8	3.094	2 5 27.9	3	17.97	
	Lacaille 9113	7.7	22 15 21.22	4	3.367	— 26 32 40.2	1	18.00	
	Weisse XXII, 303 . . .	9.4	22 15 23.10	2	3.048	+ 2 19		18.00	
	O. Arg. S. 22117 . . .		22 16 6		3.306	— 21 19 18.6	2	18.03	
	Lacaille 9120		22 16 16		3.371	27 4 41.8	1	18.04	
	Lacaille 9119	6.4	22 16 21.10		3.558	39 50		18.04	
	Lacaille 9126	7.7	22 16 49.11	1	3.338	— 24 5		18.06	
	Lacaille 9127	6.5	22 16 56.01	1	3.375	— 27 34		18.06	
π	Aquarii		22 18 7.60	7	3.065	+ 0 40 5.1		18.10	
	Lacaille 9131	6.8	22 18 18.52	3	3.386	— 28 41		18.11	
	Anonymous		22 18 27		+ 3.390	— 29 4 37.5		18.12	
	B. A. C. 7851		22 18 35		— 3.695	+ 85 24 5.8	3	18.12	
53	Aquarii, (1st star) . .		22 18 57.68	1	+ 3.251	— 17 27 10.5	1	18.14	
53	Aquarii, (2d star) . . .		22 18 58.17	1	3.251	17 27 5.1	1	18.14	
	Lacaille 9135	7.0	22 19 50.46	3	3.362	27 7 50.2	1	18.17	
	Anonymous	6.5	22 19 59.94	2	3.543	39 49		18.18	
	B. A. C. 7826	5.2	22 20 26.11	1	3.541	39 50		18.19	
	Lacaille 9139	7.0	22 21 0.06	1	3.505	37 41		18.21	
	Lacaille 9142	7.4	22 21 6.67	2	3.307	22 47 3.3	1	18.22	
	Anonymous	8.2	22 21 32.38	1	3.386	29 26		18.23	
	Lacaille 9144	7.1	22 21 33.91	4	3.385	29 22		18.23	
ζ	Aquarii, (1st star) . . .		22 21 37.36	2	3.079	0 44 8.0	1	18.24	
ζ	Aquarii, (2d star) . . .		22 21 37.46	2	3.079	0 44		18.24	
56	Aquarii		22 22 46		3.222	15 17 59.1	2	18.28	
	Lacaille 9159	6.7	22 23 5.19	1	3.411	31 43		18.29	
σ	Aquarii		22 23 14.10	2	3.183	11 23 30.4	1	18.29	
β	Piscis Australis . . .	5.6	22 23 32.14	4	3.428	33 4		18.30	
	Anonymous	8.5	22 23 32.53	2	3.427	33 1		18.30	
	Lacaille 9163	6.4	22 23 41.75	3	+ 3.468	— 36 0		18.31	
	B. A. C. 7851		22 23 53.90	2	— 3.698	+ 85 24		18.32	
	Lacaille 9167	6.4	22 25 15.22	2	+ 3.460	— 35 51		18.37	
	Lacaille 9169	6.8	22 25 41.41	1	3.386	30 23		18.38	
	Lacaille 9172	7.8	22 26 9.38	2	3.416	32 52		18.40	
	Lacaille 9175	7.1	22 26 26.99	1	3.449	● 35 24		18.41	
	O. Arg. S. 22237 . . .	8.0	22 27 5.37	1	+ 3.270	— 20 35		+ 18.43	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
2660		Lacaille 9180	6.4	22 27 54.02	3	+ 3.313	— 24 43		+ 18.46	
2661	η	Aquarii		22 28 9.68	10	3.080	0 50 16.1	3	18.47	
2662		B. A. C. 7872	6.2	22 28 41.94	3	3.401	32 23		18.48	
2663		Piazzi XXII, 154	7.5	22 28 45.50	3	3.400	32 21		18.49	
2664		Weisse XXII, 602	8.5	22 29 15.32	1	3.172	— 11 1		18.50	
2665		B. A. C. 7871 S. P.		22 29 48.21	1	1.089	+ 75 30		18.52	
2666		Weisse XXII, 619	8.2	22 29 50.91	1	3.172	— 11 1		18.52	
2667		O. Arg. S. 22282		22 30 5		3.284	22 31 15.9	1	18.53	
2668		Lacaille 9190	7.0	22 30 5.30	1	3.419	34 11		18.53	
2669		Lacaille 9195	7.8	22 30 28.08	2	3.324	26 21		18.54	
2670	κ	Aquarii	5.2	22 30 30.26	3	3.116	4 56 57.0	1	18.54	
2671		Lacaille 9196	6.5	22 30 50.77	1	3.485	39 10		18.56	
2572		Lacaille 9197	6.4	22 30 56.19	2	3.411	33 49		18.56	
2673		Lacaille 9199	6.0	22 30 57.06	2	3.358	29 28		18.56	
2674		B. A. C. 7891	7.1	22 31 56.16	2	3.350	29 3		18.59	
2675		O. Arg. S. 22316	7.8	22 31 58.46	2	3.350	29 4		18.59	
2676		B. A. C. 7895	6.1	22 32 33.00	4	3.376	31 23		18.61	
2677		Lacaille 9208	7.1	22 33 24.36	3	3.294	24 15		18.64	
2678		Lacaille 9209	7.0	22 33 39.11	2	3.313	— 26 4		18.65	
2679	ζ	Pegasi		22 34 28.85	3	2.985	+ 10 6 6.3	3	18.68	
2680		Lalande 44373	7.8	22 34 37.68	2	3.165	— 10 52		18.68	
2681	ρ	Gruis	4.7	22 35 21.94	3	3.509	42 9		18.70	
2682		Lacaille 9221	6.5	22 35 25.07	5	3.270	22 23		18.71	
2683	65	Aquarii	7.0	22 35 39.12	2	3.164	10 50		18.71	
2684	20	Piscis Australis	6.3	22 37 51.19	4	3.300	25 58		18.78	
2685		Lacaille 9244	6.5	22 39 2.58	1	3.383	33 55		18.82	
2686		Lacaille 9242	6.8	22 39 2.87	3	3.494	42 22		18.82	
2687		Lacaille 9246	7.0	22 39 16.23	1	3.376	33 24		18.82	
2688		Lacaille 9248	6.1	22 39 27.28	2	3.393	34 53		18.83	
2689		Lacaille 9252	7.0	22 40 6.94	1	3.435	38 30		18.85	
2690		Lacaille 9256	6.4	22 40 14.77	3	3.301	26 38 41.0	1	18.85	
2691		Lacaille 9261	7.8	22 40 46.10	2	3.316	28 17		18.87	
2692		Lacaille 9271	6.1	22 42 10.46	4	3.367	33 33		18.91	
2693	τ^2	Aquarii		22 42 10.54	1	3.186	14 19 48.9	1	18.91	
2694		Lacaille 9270	7.2	22 42 11.49	2	3.476	42 12		18.91	
2695	21	Piscis Australis	6.4	22 43 37.21	4	3.327	30 16 36.6	1	18.95	
2696		Lacaille 9283		22 43 41		3.271	— 24 30 22.2	1	18.95	
2697	ι	Cephei		22 44 42		2.127	+ 65 27 52.5	2	18.98	
2698	γ	Piscis Australis	5.2	22 44 43.97	2	3.359	— 33 37		18.98	
2799		Lacaille 9290	7.5	22 44 59.16	2	3.319	29 55 25.9	1	18.99	
2700	λ	Aquarii	4.0	22 45 18.54	1	3.134	8 19 23.8	1	19.00	
2701		Lacaille 9296	7.0	22 46 41.84	1	3.274	25 43		19.04	
2702		Lacaille 9299	6.6	22 47 20.69	3	3.250	23 6 19.3	1	19.06	
2703		Lacaille 9298	6.0	22 47 22.80	1	3.387	— 37 8		19.06	
2704	1	Piscium	5.7	22 47 49.68	1	+ 3.066	+ 0 19		19.07	
2705		B. A. C. 7990		22 47 55		— 0.033	+ 82 24 39.2	1	19.07	
2706		Lacaille 9301	6.0	22 48 7.13	1	+ 3.333	— 32 22 40.4	3	19.08	
2707	δ	Piscis Australis	5.7	22 48 10.90	1	3.343	33 17		19.08	
2708		Anonymous	8.3	22 48 20.09	1	3.387	37 26		19.08	
2709		Lacaille 9307	6.0	22 48 36.30	2	3.331	32 18 18.9	1	19.09	
2710	α	Piscis Australis		22 49 54.40	10	3.308	30 21 47.9	5	19.13	
2711		Lacaille 9313	7.0	22 50 0.23	1	3.394	38 41		19.13	
2712		O. Arg. S. 22513	9.0	22 50 9.54	1	3.275	26 51		19.13	
2713		Lacaille 9315	6.9	22 50 9.72	1	3.275	26 51		19.13	
2714		B. A. C. 7998	6.1	22 50 46.57	1	3.364	36 16		19.15	
2715		B. A. C. 8002	6.0	22 51 55.82	1	3.300	30 13		19.18	
2716		Lacaille 9326	7.3	22 52 28.74	1	3.428	41 53		19.19	
2717		B. A. C. 8007	6.8	22 52 30.65	4	3.261	25 55		19.19	
2718		Lacaille 9330	6.8	22 52 42.31	2	3.268	26 54		19.20	
2719		Lacaille 9331	6.5	22 52 48.45	2	3.264	26 22		19.20	
2720		O. Arg. S. 22544	8.1	22 52 49.23	2	3.268	26 53		19.20	
2721		O. Arg. S. 22545		22 52 51		3.238	23 16 35.4	1	12.20	
2722		Anonymous		22 53 40		3.193	17 37 52.2	1	19.22	
2723		Lacaille 9336	7.2	22 53 51.01	1	3.238	23 33		19.23	
2724		Lacaille 9338	6.5	22 54 1.92	2	+ 3.235	— 23 10 6.2	1	+ 19.23	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		s.	° ′ ″		″	
2725		Lacaille 9343	6.4	22 54 46.22	2	+ 3.357	— 37 10		+ 19.25	
2726		B. A. C. 8026		22 55 22.46		— 0.243	+ 83 36		19.26	
2727		Lacaille 9357	6.5	22 56 2.60	2	+ 3.264	— 27 34 0.9	1	19.28	
2728		Lacaille 9356	6.6	22 56 4.52	4	3.295	31 12		19.28	
2729		Lacaille 9359	6.8	22 57 15.32	3	3.263	27 54		19.31	
2730		Lacaille 9361	8.7	22 57 43.55	2	3.240	— 25 6		19.32	
2731	α	Pegasi		22 57 47.34	11	2.980	+ 14 27 10.4	4	19.32	
2732		Lalande 45137	6.2	22 57 48.08	2	3.187	— 17 50		19.32	
2733		B. A. C. 8045	5.9	22 59 5.11	3	3.363	39 39		19.35	
2734	c^1	Aquarii	5.5	22 59 9.28	2	3.232	24 29 53.8	1	19.35	
2735		Lacaille 9373	6.6	22 59 20.17	2	3.280	30 46		19.36	
2736		Anonymous		22 59 32		3.322	35 37 21.3	1	19.36	
2737		Weisse XXII, 1276 . .	8.7	23 1 0.82	3	3.147	12 21		19.40	
2738		Lacaille 9379	7.1	23 1 21.12	2	3.249	26 35 11.7	1	19.40	
2739		O. Arg. S. 22634 . . .		23 1 58		3.207	21 55 52.9	1	19.42	
2740		B. A. C. 8064	6.4	23 2 10.42	3	3.256	28 50 48.0	2	19.42	
2741		Anonymous	9.5	23 2 53.88	2	3.193	20 12		19.44	
2742		Lacaille 9388	6.0	23 3 11.99	2	3.264	30 17		19.44	
2743		O. Arg. S. 22666 . . .	8.9	23 4 59.93	8	3.176	18 7		19.48	
2744		O. Arg. S. 22670 . . .	8.9	23 5 11.08	8	3.175	18 5		19.49	
2745		O. Arg. S. 22682 . . .	8.8	23 6 6.76	1	3.174	18 8		19.50	
2746		O. Arg. S. 22688 . . .		23 6 46		3.170	17 40 13.1	1	19.52	
2747		O. Arg. S. 22691 . . .	9.0	23 6 56.33	1	3.172	18 8		19.52	
2748	φ	Aquarii	4.5	23 7 4.21	3	3.108	6 48 10.0	1	19.52	
2749		Lalande 45473	9.0	23 7 7.88	1	3.181	19 38		19.52	
2750		Lacaille 9411	6.6	23 7 50.51	1	3.217	25 36 49.5	2	19.54	
2751		Lacaille 9414	6.8	23 8 10.06	2	3.249	30 36		19.55	
2752		Anonymous		23 8 13		3.193	22 5 17.2	1	19.55	
2753	ψ^1	Aquarii		23 8 33		3.123	9 50 58.7	1	19.55	
2754		Lacaille 9426	6.8	23 9 7.88	3	3.238	29 27		19.56	
2755		Anonymous	8.0	23 9 17.00		3.246	30 39		19.57	
2756		O. Arg. S. 22723 . . .		23 9 23		3.190	— 21 57 51.9	1	19.57	
2757	γ	Piscium	5.0	23 9 54.49	14	3.059	+ 2 31 5.6	6	19.58	
2758	γ	Sculptoris	5.0	23 11 15.21	1	3.257	33 17 38.7	1	19.60	
2759		Lacaille 9437	7.0	23 11 22.42	1	3.243	31 18 58.2	2	19.61	
2760		Lacaille 9436	7.6	23 11 22.69	1	3.231	— 29 30		19.61	
3761		Weisse XXIII, 227 . .	7.0	23 11 39.66	1	3.084	+ 2 29		19.61	
2762	ψ^3	Aquarii		23 11 40.56	2	3.123	— 10 22 31.2	1	19.61	
2763		Lacaille 9440	6.5	23 11 45.15	3	3.306	39 55		19.61	
2764		Lacaille 9444	6.6	23 12 8.08	2	3.262	34 28		19.62	
2765	96	Aquarii	5.0	23 12 8.34	2	3.101	5 53		19.62	
2766		Anonymous		23 12 12		3.298	39 12 35.1:	1	19.62	
2767		Lacaille 9447	7.2	23 12 36.82	2	3.192	— 23 36		19 63	
2768	ο	Cephei		23 12 54		2.418	+ 67 20 46.2	3	19.63	
2769		Anonymous		23 12 59		3.295	— 39 15 37.1	1	19.64	
2770	b	Piscium		23 13 12.74	1	3.050	+ 4 37		19.64	
2771		B. A. C. 8132	6.2	23 13 47.50	4	3.213	— 27 45 8.0	1	19.65	
2772		O. Arg. S. 22229 . . .		23 13 55		3.200	25 38 22.0	1	19.65	
2773		Lacaille 9453	6.8	23 15 24.76	1	3.188	24 13		19.68	
2774		B. A. C. 8145	7.3	23 15 38.74	1	3.306	42 22		19.68	
2775		O. Arg. S. 22798 . . .		23 15 39.88	1	3.187	24 10		19.68	
2776		Lacaille 9458	7.1	23 16 14.10	3	3.230	31 52 44.4	1	19.69	
2777		Lacaille 9462	6.9	23 16 41.25	3	3.176	22 32		19.70	
3778		O. Arg. S 22817 . . .	9.0	23 17 3.72	3	3.153	18 5		19.70	
2779		Lacaille 9468		23 17 58.11	1	3.217	30 46 32.2	1	19.72	
2780		Lacaille 9473	6.6	23 18 45.02	3	3.200	28 12		19.73	
2781		B. A. C. 8167	6.9	23 19 12.43	2	3.170	22 31		19.74	
2782		Lacaille 9479	7.5	23 19 37.92	2	3.174	— 23 29 34.2	2	19.75	
2783	κ	Piscium		23 19 45.34	4	3.070	+ 0 29 27.2	1	19.75	
2784		Lacaille 9482		23 20 4		3.196	— 28 2 57.2	1	19.75	
2785		B. A. C. 8172	6.2	23 20 29.17	2	3.241	36 19		19.76	
2786		O. Arg. S. 22851 . . .		23 20 36		3.138	— 16 4 7.8	1	19.76	
2787	θ	Piscium		23 20 52		3.050	+ 5 36 38.8	4	19.76	
2788		Lacaille 9489	6.5	23 21 1.31	3	3.183	— 26 11 25.0	4	19.77	
2789		B. A. C. 8184	6.0	23 22 17.87	1	+ 3.092	— 5 18		+ 19.79	

Number.		Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
				h. m. s.		"	° ' "		"	
2790		Lacaille 9497	7.3	23 22 54.07	1	+ 3.162	− 22 39		+ 19.79	
2791		Lacaille 9496	7.0	23 23 2.94	2	3.238	37 44		19.80	
2792		Lacaille 9499	7.2	23 23 16.95	3	3.171	24 58		19.80	
2793		Lacaille 9500	7.2	23 23 26.91	2	3.226	35 53		19.80	
2794		Lacaille 9508	6.8	23 24 33.08	2	3.175	26 31 2.3	2	19.82	
2795	β	Sculptoris	4.5	23 25 27.16	2	3.233	38 36		19.83	
2796		O. Arg. S. 22897 . . .	8.4	23 25 45.90	2	3.148	20 52		19.83	
2797		Lacaille 9516	7.0	23 26 0.28	3	3.196	32 3 45.5	1	19.84	
2798		Lacaille 9519	7.8	23 26 38.08	1	3.165	25 38		19.84	
2799		O. Arg. S. 22911 . . .	9.1	23 27 17.77	1	3.133	17 46		19.85	
2800		Lacaille 9524	6.8	23 27 26.82	1	+ 3.211	− 35 52		19.85	
2801		B. A. C. 8213		23 27 50.77	5	− 0.019	+ 86 32 6.9	5	19.86	
2802		Lacaille 9527	7.2	23 28 16.77	1	+ 3.169	− 28 16		19.86	
2803		Lacaille 9528	6.7	23 28 36.67	3	3.184	31 25		19.87	
2804		Lacaille 9532	7.4	23 29 19.83	1	3.159	26 0 50.4	1	19.88	
2805		Lacaille 9534	6.5	23 29 40.81	2	3.185	32 38 43.7	1	19.88	
2806		Lacaille 9539	7.0	23 30 31.05	1	3.154	25 39		19.89	
2807		Lacaille 9548		23 32 22		3.141	23 18 26.7	2	19.91	
2808		Lacaille 9547	6.6	23 32 26.82	3	3.178	− 33 30		19.91	
2809	ι	Piscium	4.2	23 32 45.03	8	3.059	+ 4 52 3.1	4	19.91	
2810		Lacaille 9550	7.0	23 33 5.52	1	3.153	− 26 58		19.92	
2811		Lacaille 9551		23 33 12		3.172	− 32 41 22.3	1	19.92	
2812	γ	Cephei		23 33 38.28		2.415	+ 76 51 4.7	7	19.92	
2813		Lacaille 9555	7.2	23 33 48.38	1	3.143	− 24 56		19.93	
2814	λ	Piscium		23 34 54.13	1	3.069	+ 1 1		19.94	
2815		Lacaille 9568	6.8	23 35 42.34	3	3.153	− 29 49 11.3	2	19.94	
2816		Lacaille 9567	6.4	23 35 43.84	2	3.181	37 33 41.0	1	19.94	
2817		Lacaille 9570	6.5	23 36 1.25	2	3.166	33 51		19.95	
2818		Lacaille 9576	6.7	23 36 31.20	2	3.165	34 12 16.1	1	19.95	
2819		Lacaille 9579	6.0	23 37 11.46	4	3.140	27 1 20.9	1	19.96	
2820		Lacaille 9583		23 38 37.62	1	3.172	38 45		19.97	
2821		O. Arg. S. 23036 . . .	8.5	23 38 49.97	4	3.112	17 55		19.97	
2822		B. A. C. 8260	7.7	23 39 7.13	1	3.183	42 20		19.97	
2823		Lacaille 9599	7.0	23 40 9.85	2	3.165	38 51		19.98	
2824		Weisse XXIII, 809 . .	8.5	23 40 11.78	1	3.077	− 2 17		19.98	
2825	τ	Cassiopeæ		23 40 13		2.889	+ 57 52 20.8	1	19.98	
2826		O. Arg. S. 23052 . . .		23 40 54		3.107	− 17 28 29.2	1	19.99	
2827		O. Arg. S. 23054 . . .	8.0	23 41 2.69	1	3.132	28 40		19.99	
2828	δ	Sculptoris	4.5	23 41 37.66	7	3.131	28 54 16.5	2	19.99	
2829		Lacaille 9605	6.5	23 42 3.70	2	3.129	28 37 51.8	1	19.99	
2830		Lacaille 9606	7.0	23 42 11.05	2	3.115	− 22 24		20.00	
2831	21	Piscium		23 42 17.34	1	3.071	+ 0 18		20.00	
2832		Lacaille 9610	6.4	23 42 34.10	2	3.122	− 26 6 32.4	2	20.00	
2833		Lacaille 9611	7.0	23 42 56.31	2	3.129	30 10 50.4	2	20.00	
2834		Lacaille 9619	7.0	23 44 11.14	2	3.132	33 13		20.01	
2835		Lacaille 9625	6.7	23 44 37.79	1	3.132	33 54		20.01	
2836		Lacaille 9630	6.6	23 45 26.44	2	3.113	25 46		20.02	
2837		Anonymous	9.0	23 45 26.44	1	3.109	23 49		20.02	
2838		B. A. C. 8304	6.3	23 46 6.30	2	3.110	25 1		20.02	
2839		Lacaille 9636	6.5	23 46 28.82	2	3.118	30 10 31.4	2	20.02	
2840		Lacaille 9637	6.9	23 46 42.77	3	3.118	31 8		20.02	
2841		B. A. C. 8308, (1st star) .	7.8	23 47 6.33	2	3.112	27 49 20.4	1	20.02	
2842		B. A. C. 8308, (2d star) .	7.0	23 47 6.97	2	3.112	27 49		20.02	
2843		O. Arg. S. 23120 . . .	9.1	23 47 25.51	3	3.104	23 49		20.03	
2844		B. A. C. 8313	6.3	23 48 1.85	1	3.117	32 42		20.03	
2845		Lacaille 9644	6.7	23 48 1.96	1	3.117	− 32 40		20.03	
2846		B. A. C. 8314		23 48 3.49	3	2.835	+ 73 37 52.3	1	20.03	
2847		O. Arg. S. 23124 . . .		23 48 11		3.095	− 18 36 26.9	1	20.03	
2848		O. Arg. S. 23126 . . .		23 48 34.68	1	3.101	23 45		20.03	
2849		Lacaille 9652 . . .	6.5	23 48 54.24	4	3.099	22 46 18.1	2	20.03	
2850		Anonymous		23 49 12		3.109	30 17 17.6	2	20.03	
2851		Lacaille 9655	6.8	23 49 17.00	1	3.102	− 25 31		20.03	
2852		Weisse XXIII, 1002 . .	8.5	23 49 22.03	1	3.07	+ 0 28		20.03	
2853		Lacaille 9659	6.0	23 49 54.60	1	3.102	− 27 24 13.0	1	20.04	
2854		Lacaille 9663	6.5	23 50 23.86	1	+ 3.110	− 33 58		+ 20.04	

Number.	Name.	Magnitude.	Right Ascensions, 1860.0.	No. of obs.	Precession.	Declinations, 1860.0.	No. of obs.	Precession.	Remarks.
			h. m. s.		s.	° ′ ″		″	
2855	O. Arg. S. 23156 . . .		23 50 52		+ 3.094	− 22 40 49.9	+ 1	+ 20.04	
2856	Anonymous	8.5	23 51 28.33	2	3.101	− 30 16		20.04	
2857	ω Piscium	5.0	23 52 7.41	11	3.067	+ 6 5 18.7	6	20.04	
2858	B. A. C. 8332	5.7	23 52 15.65	3	3.098	− 30 16		20.04	
2859	Lacaille 9680		23 52 33		3.093	25 25 28.8	1	20.05	
2860	Anonymous		23 53 20		3.091	26 24 4.3	1	20.05	
2861	O. Arg. S. 23181 . . .	8.5	23 53 30.19	1	3.088	23 27		20.05	
2862	O. Arg. S. 23185 . . .	8.3	23 53 50.14	3	3.088	23 33		20.05	
2863	Lacaille 9695	6.7	23 54 10.20	2	3.091	29 30		20.05	
2864	Lacaille 9699	6.7	23 54 47.5[illegible]	1	3.096	38 41		20.05	
2865	ζ Sculptoris	5.7	23 55 8.90	3	3.089	30 30 1.1	2	20.05	
2866	Lacaille 9701	6.2	23 55 56.81	3	3.083	24 56		20.05	
2867	Lacaille 9702	8.0	23 55 59.90	2	3.083	25 22		20.05	
2868	Lacaille 9705	6.5	23 57 1.77	1	3.082	30 54		20.05	
2869	B. A. C. 8360		23 57 9		3.077	17 18 21.9	3	20.05	
2870	Lacaille 9706	6.2	23 57 10.02	2	3.082	30 2 57.1	1	20.05	
2871	Lacaille 9707	7.2	23 57 12.80	2	3.082	30 10		20.05	
2872	Anonymous	6.5	23 57 42.01	1	3.081	33 14		20.06	
2873	Weisse XXIII, 1183 . . .	7.2	23 57 53.12	2	3.072	− 1 17		20.06	
2874	Weisse XXIII, 1186 . .	8.4	23 57 59.53	1	3.072	+ 1 37		20.06	
2875	Lacaille 9714	8.2	23 58 1.42	1	3.080	− 33 15		20.06	
2876	O. Arg. S. 23233 . . .		23 58 59		3.075	29 55 54.0	1	20.06	
2877	Lacaille 9722	7.0	23 59 5.29	2	3.075	33 35		20.06	
2878	Weisse XXIII, 1209 . .	8.0	23 59 8.59	2	3.072	2 1		20.06	
2879	Lacaille 9724	7.9	23 59 40.08	1	+ 3.073	− 23 53		+ 20.06	

METEOROLOGICAL OBSERVATIONS

MADE AT THE

U. S. NAVAL OBSERVATORY,

DURING THE

YEAR 1863.

INTRODUCTION.

The Meteorological Journal is under charge of Mr. John R. Eastman, aid. The observations are made at every third hour of the day and night, commencing with 3*h.* 0*m.* a. m., civil time, Washington. Mr. Thomas Hays and Mr. Dennis Horigan, watchmen, are the observers. Their instructions inculcate unfailing punctuality and the utmost carefulness in reading.

BAROMETERS.

A standard barometer, made by Mr. James Green, was mounted in the office of the Superintendent during March, 1862. Its cistern is six inches higher than that of the Newman barometer in the northwest rooms, with which the daily observations are made. Drawings of the instrument are given in the volume for 1862.

Two brackets projecting from a stout mahogany board hold pivots at the extremities of a strong hollow cylinder of bronzed metal. The pivots are of steel. The upper one has a motion of revolution only, whilst the lower rests in a socket that may be moved laterally by three equidistant capstan-head screws, and thereby admits of adjustment for verticality. Just below the upper pivot, and also at seven inches above the lower one, there are collars, to each of which is secured, perpendicular to the axis of the cylinder, a strong and nearly similar arm of brass. Their purpose is to support the barometer tube and its measuring apparatus. Cylindrical apertures through these arms permit free passage of the measuring rod, the tube being held by collars at their semicircular extremities. The construction of the arms is such that the centre of the apertures for the measuring rod and the barometer tube are parallel with the axis of the large cylinder. A small spirit-level is fitted upon the lower arm perpendicular to that plane.

A third arm, for support of the cistern, is firmly secured to the cylinder by a collar just above the lower pivot. The cistern is an inverted bell glass, four inches in diameter. It is covered with a parallel plate of the same material, whose under surface and the rim of the bell have been ground smooth so as to prevent the passage of dust between them. There are two apertures in the cover, each of which is fitted with an ivory ferule cemented to the glass. The barometer tube passes freely, but not too loosely, through the larger and central one, and the extremity of the measuring apparatus is admitted through the smaller. The cistern is filled with mercury to within one-fourth of an inch of its rim.

The external and internal diameters of the barometer tube are respectively 1.0 and 0.8 inch. The measuring apparatus for its mercurial column consists of a hollow brass cylinder 0.8 inch in diameter, having a slender ivory cone at its lower extremity, and a silvered divided scale at the upper. The apex of the former is brought into contact with the surface of the mercury in the cistern by a slow-motion screw that passes through a flange from the rod into the lower arm, which sustains it. The height of the column is read to 0.002 inch by means of the divided scale and a vernier moved by a milled head without and a rack and pinion within the hollow cylinder. Attached to the vernier, and freely movable on the tube with it, there is a cylindrical band that is perforated by oblong slits in front and rear. The upper edges of the slits are in the same horizontal plane as 0 of the vernier, and the edge of the rear one is serrated. Rays of light passing through the teeth greatly assist the eye in placing these edges tangent to the convex surface of the mercury in the tube.

The attached thermometer is suspended between the main supporting shaft and the cylinder of the measuring apparatus. Its bulb is 7.5 inches long and 0.9 inch in diameter, and its scale is of silvered brass 6.5 inches long. The latter is divided to half degrees from 37° to 103° Fahrenheit, the length of each degree being 0.095 inch.

The advantages which Green's barometer has over those of Newman's pattern are—

1st. The mobility of the main supporting cylinder and its attached spirit-level permit speedy verification of verticality.

2d. The contact of the zero of the scale and its image can be observed with greater certainty.

3d. The serrated edge permits more accurate reading at the top of the column.

4th. The position of the attached thermometer affords greater probability that the temperature of its mercury and that of the barometer column will be similar.

Newman's barometer.—The barometer in daily use was made by Newman. Its cistern and tube are of glass. The internal diameter of the former is 3.0 inches, and that of the latter 0.532 inch. The cap rests in a cylindrical box of bronzed metal five inches deep, the surface of the mercury being visible through slits in the top of the box. The upper end of the tube is held in the arch of a double metallic frame, which is secured in the cap to the box. Pivots at the bottom of the box and top of the arch rest in the sockets of heavy brackets that project from a substantial mahogany board. Three equidistant horizontal screws press against the pivot of the lower socket and effect a vertical position to the tube. The scale by which the height of the mercury column is read is attached to a brass rod within one of the upright frames, and is movable by a slow-motion screw. It is silvered and divided to 0.05 inch, but by means of a vernier may be read to 0.002 inch. There is an ivory point at the lower extremity and within the cistern, and the scale is in adjustment for use when the point and its image are in apparent contact.

The temperature of the mercury within the cistern is shown by a small ivory scale thermometer, which is fitted within the other tube-sustaining frame, its bulb passing below the surface of the mercury. The divisions of the thermometric scale are to 1°, and they are supposed to be correct.

The instrument is placed between two north windows of the northwest room on the first floor of the building, its cistern 103 feet above mean half-tide of the Potomac river. Beyond verification of the verticality of its tube, there was no necessity for disturbing it during the year 1863. Towards the close of 1862, the following comparisons were made with Green's standard, the observers being Professor Hesse and Acting Master D. G. Major:

DECEMBER 20, 1862.

Time.	Green's standard.	Attached therm.	Observer.	Newman's standard.	Attached therm.	Observer.
h. m.	in.	°		in.	°	
11 45	30.706	75.6	M.	30.676	69.0	He.
	.710	75.4	M.	.676	68.9	He.
50	.706	75.4	M.	.678	68.9	He.
53	.706	75.2	He.	.680	69.0	M.
	.706	75.0	He.	.678	69.0	M.
57	30.707	75.0	He.	30.676	69 6	M.

Correcting the above for temperature and capilarity, it would appear that all observations made with Newman's barometer must be increased by 0.008 inch, but as subsequent comparisons throw doubt upon the accuracy of that result, the readings of 1863 have not been so corrected. The comparisons referred to have been made on or about the 1st of each month during 1864, and will be published with the observations of that year.

The temperature corrections for each tri-hourly observations have been derived from Guyot's tables, published by the Smithsonian Institution.*

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* Tables, meteorological and physical, prepared for the Smithsonian Institution by Arnold Guyot, P. D., LL. D., Wash ton, 1859.

METEOROLOGICAL OBSERVATORY.

In 1862 a small building for special protection of thermometers was erected about twenty yards southwest of the central edifice. It is constructed of wood, painted white both inside and without. Its form is octagonal, each side being two feet five inches by six feet three inches high to the eaves. Its roof is of tin, left bright on the under side; the ceiling is of thick plank dovetailed together, and between it and the roof there is open space. The door is on the north side, and it, as well as the sides, are of double lattice-work, with a space of three inches between the inner and outer lattices. They terminate one foot above the ground, and as the building is on a grass-plat, instruments within it should indicate correct temperature. But as there is a dense growth of trees entirely surrounding the Observatory buildings, and the area, enclosed by trees and buildings within which the thermometers are suspended, does not exceed one acre in extent, it may be doubted whether our thermometers show true temperatures either during calm and clear weather or high winds. In both cases the enclosed air becomes unduly heated.

THERMOMETERS.

The thermometers are four in number. They were made specially for the Observatory by Mr. James Green, of New York.

Dry thermometer.—This is a mercurial thermometer, whose bulb is one and a half inch long and two-tenths of an inch in diameter. Its scale is of glass, twelve inches long, eight-tenths of an inch wide, and one-tenth of an inch thick. The bulb projects about one inch beyond the scale. The divisions of the latter are engraved upon the glass to half degrees from −30° to +125° Fahrenheit. Each division is about 0.032 inch.

Wet thermometer.—This is similar to the preceding in materials, construction, and dimensions. Its scale extends from −35° to +115°. Its bulb is covered with fine linen, which is kept moist by the capillary action of a bundle of fibres that communicate with water in a bird-glass placed close beside it. The linen is changed from time to time when its free action appears to have been impaired by dust.

Maximum thermometer.—This differs from the instrument described only in the addition of a small register above the column of mercury and in the extent of its scale. The register is of steel; but to obviate as far as is possible the risk of entanglement from the action of mercury, a small porcelain disk is interposed between its extremity and the top of the column. The scale of this instrument extends from −32° to +163° Fahrenheit.

Minimum thermometer.—This is a transparent spirit thermometer, with bulb and tube of the same form, but somewhat greater dimensions than those of the other instruments. Its scale is of the same material and size, and is divided from −18° to +105°. Its registering index is a short piece of delicate steel wire enclosed in thin blue glass, with a knob at its outer extremity, or that farthest from the bulb. It floats freely in the spirit.

The thermometers are suspended on metallic frames five feet from the ground, and near the centre of the building. Up to 27th October, these frames were held by a single vertical brass rod, which was screwed to the ceiling. But, as high winds sensibly disturbed the indices to the register thermometers, the frames were attached to a short metallic support, which was permanently secured to the ground. They retain their relative places, and are at the same height as before. Rods placed across the building prevent accidental disturbances to them, or too near approach of the person in reading. For night observations the lantern is placed on a slide, which permits vertical or rotary motion, so that its pencil of rays falls upon the top of the columns to be noted.

The register thermometers are in a horizontal position beside each other and above the other two instruments, which also are near and parallel. The former are read only at six p. m. daily, after which their indices are readjusted by means of a small magnet kept for that purpose within the Observatory.

Solar thermometer.—This instrument also was specially made by Mr. Green. It is a mercurial thermometer, twelve inches long, with a blackened spherical bulb enclosed with its tube within a cylinder of glass of the same form as itself, but of about three times the diameter. Air has been exhausted from the cylinder, and in the centre of which it is kept by cork collars, one of them being near each extremity. The tube is divided to constitute the scale, and is numbered to whole degrees from +5° to +173° Fahrenheit. The engraved marks are rendered distinct by a band of white porcelain at the back of the tube. Just above the bulb the tube is contracted, so that, with the tube in a horizontal position, expanding mercury passes freely; but at each decrease of temperature the column is broken there, and its summit marks the greatest heat since the preceding adjustment.

The instrument rests in metallic crutches three inches high, fastened to a board 16 by 5 inches, which is painted green and placed on the grass. The tube lies very nearly parallel with the surface of the ground, and for adjustment is raised to a vertical position after every observation.

INVESTIGATION OF ERRORS.

During the early part of 1862, and before the new thermometers were permanently placed for observation, a series of comparisons was made between them and the standard, whose errors were investigated by Mr. S. C. Walker.* In those comparisons the standard was near the centre of a board, with the new thermometers around and close to it, and their bulbs in contact with the board. The resulting errors of the new instruments for temperature below 50° are published in the introduction to the meteorological observations for 1862, p. 665, and are pretty uniformly in excess of 1° for every one of the instruments.

Afterwards the standard was suspended beside the other thermometers, and comparisons were noted at different temperatures during the year 1863. In these the bulbs were not in contact with any substance. The results are as follows, dates only being omitted. They discredit all the early comparisons, but more especially those below 50°, and which may have been affected by contact of bulbs with the board.†

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* Astronomical observations made at the Observatory, Washington, in 1845, Appendix, p. 54.

† Dr. Moesta, Director of the National Observatory at Santiago, writes me of an analogous discordance in comparing a standard of Barrow's construction with two made for him by Greiner, of Berlin. Barrow's was fitted in a mahogany box having a glass front. He says: "I found perfect accordance when they were suspended in my room, but not so when they were in the shade out doors. There, as the temperature rose, Barrow's remained lower, and as the heat decreased that thermometer continued higher. I broke the protecting glass both at the upper and at the lower part of the scale, so as to allow perfectly free circulation, but without good result, and finally I cut away the mahogany box, so as to leave the bulb wholly free, after which they all agreed admirably."

COMPARISON OF THERMOMETERS, 1863.

Standard.	Dry.	Max.	Min.	Standard.	Dry.	Max.	Min.
°	°	°	°	°	°	°	°
13.3	13.3	13.3	13.3	56.3	56.4	56.4	56.4
21.8	21.8	21.8	21.9	58.0	58.0	57.8	58.0
23.1	23.1	23.1	23.1	64.0	64.0	64.0	64.3
23.3	23.3	23.3	23.3	64.7	65.0	65.0	64.6
24.0	23.9	24.2	24.0	66.1	66.2	66.0	66.4
25.4	25.4	25.4	25.5	67.0	67.5	67.0	67.5
27.0	27.0	27.1	27.2	67.4	68.0	67.6	68.2
27.3	27.3	27.3	27.4	67.6	67.4	67.5	67.5
29.9	29.9	29.9	29.9	71.4	71.6	71.5	71.8
30.9	30.9	31.0	30.9	72.0	72.0	72.3	71.8
32.0	31.5	31.9	31.8	72.2	72.1	71.8	72.2
33.0	33.0	33.1	33.0	72.3	72.4	72.3	72.4
33.6	33.9	33.9	33.9	72.5	72.5	72.3	72.5
33.8	33.8	34.0	33.7	73.0	72.9	73.0	73.0
34.0	34.1	34.2	34.0	77.7	77.6	77.5	77.7
34.6	34.6	34.6	34.7	78.7	79.1	78.7	78.9
35.0	35.0	35.0	35.2	78.8	78.8	78.7	78.8
36.0	36.1	36.1	36.0	79.3	79.3	79.3	79.3
36.5	36.5	36.5	36.7	79.8	79.7	79.6	79.8
37.0	37.0	37.0	37.0	81.7	81.7	81.5	81.7
37.1	37.2	37.1	37.2	81.8	81.4	81.7	81.6
37.5	37.5	37.5	37.5	83.0	83.0	82.8	83.0
38.5	38.5	38.6	38.5	83.1	83.0	83.0	83.1
39.8	39.9	40.2	40.2	84.0	84.0	83.9	84.1
40.0	39.9	40.1	39.9	84.7	84.6	84.5	84.7
40.6	40.5	40.8	40.9	85.0	84.5	85.4	84.8
41.0	40.6	41.2	41.4	85.5	84.8	85.3	85.7
41.1	41.2	41.3	41.3	85.7	85.6	85.6	85.7
41.8	41.8	41.8	42.0	88.0	87.8	87.5	87.8
42.0	42.2	42.2	42.3	88.7	88.6	88.5	88.6
43.0	42.6	43.0	43.0	89.4	89.1	89.1	89.2
44.2	44.2	44.3	44.4	90.5	90.4	90.2	90.4
45.5	45.4	45.5	45.5	91.5	91.0	91.0	. .
48.0	48.1	48.1	48.2	92.5	92.5	92.5	92.5
49.8	49.6	49.6	49.5	93.2	92.8	92.9	93.0
50.8	51.0	51.3	51.0	93.2	93.2	93.0	93.2
50.8	51.0	51.0	51.0	94.0	94.3	94.0	94.3
51.2	50.8	51.2	51.4	94.5	94.2	94.3	94.4

Applying to the preceding readings of the standard the corrections for each degree as determined by Mr. Walker, each difference therefrom of the thermometers made by Mr. Green was plotted. From the curve best representing these differences and temperatures the following table has been made for corrections at each even degree from 24° to 94°, both inclusive. They are the best results attainable from data yet collected, but as they are not regarded conclusive, they have not been applied to the tri-hourly observations:

CORRECTIONS TO THERMOMETERS.

Temp.	Dry.	Max.	Min.	Temp.	Dry.	Max.	Min.
°	°	°	°	°	°	°	°
24	− 0.2	+ 0.2	− 0.1	60	+ 0.1	− 0.0	+ 0.2
25	.1	.2	.1	61	.1	.0	.2
26	.0	.1	.1	62	.1	+ .1	.3
27	.0	.1	.0	63	.1	.1	.3
28	.0	.1	.0	64	.1	.1	.4
29	.0	.1	.0	65	.2	.1	.4
30	.0	.1	.0	66	.2	.0	.4
31	.0	.2	.0	67	.2	.0	.4
32	+ .1	.2	+ .1	68	.2	.0	.2
33	.1	.3	.1	69	.2	.0	.1
34	.1	.2	.0	70	.2	.1	.0
35	.1	.2	.0	71	.2	.2	− .1
36	.1	.1	.0	72	.1	.4	.1
37	.1	.1	.1	73	.0	.3	+ .1
38	.1	.2	.1	74	.0	.1	.2
39	.2	.3	.2	75	.0	.0	.2
40	.2	.5	.5	76	.1	.0	.2
41	.0	.1	− .2	77	.1	.0	.2
42	− .2	.1	.2	78	.2	.1	.3
43	.3	.1	+ .1	79	.6	.2	.4
44	.1	.1	.2	80	.1	.0	.2
45	.0	.2	.3	81	.1	.2	.2
46	+ .1	.2	.2	82	.1	.2	.2
47	.2	.2	.2	83	.1	.1	.2
48	.2	.2	.3	84	.2	− .2	.3
49	.2	− .1	− .1	85	.3	.2	.4
50	.0	.1	.2	86	− .1	+ .2	.4
51	.0	+ .3	+ .2	87	.2	.4	.4
52	.0	.3	.2	88	.0	.5	.3
53	.0	.3	.2	89	+ .2	.3	.2
54	.0	.3	.2	90	.1	.1	.1
55	.0	.2	.2	91	.2	.0	.2
56	.0	.1	.1	92	.3	.2	.3
57	.1	.0	.1	93	.2	.3	.3
58	.1	− .1	.1	94	.1	.2	.2
59	.1	.1	.1				

DIRECTION AND FORCE OF THE WIND.

A vane revolves freely on a spindle at the top of the time-ball staff, and the point of the compass to which it is directed by the wind is estimated from the known azimuths of the lines of the building. A close approximation to the truth is arrived at during daylight; but at night, and especially on cloudy ones, when the vane is not visible as a guide to the judgment, the recorded directions are probably no more reliable than as rough guesses.

The velocity of the atmospheric current is stated in numerals, of which 0 denotes a calm, 1 a very light breeze, and so on to 10, a violent gale. These numbers, under the head "Force," are mere estimates, and, at best, are only approximative.

CLOUDS.

The nomenclature of Howard is used, C., K., S., N. being symbols for the forms which he denominates *cirrus, cumulus, stratus, nimbus,* and double letters, as C. S., C. K., &c., &c., their combinations, to indicate *cirro-stratus, cirro-cumulus,* &c. The portion of sky obscured is simply a naked-eye estimate from careful scrutiny of the whole hemisphere. A clear sky is denoted by 0, and total obscuration by 10.

RAIN-GAUGE.

This instrument is placed within the enclosure for the solar thermometer to the southwest of the main building. It is a cylinder, 4.1 inches in diameter, soldered to an inverted cone, loaded with lead on the outside and near the apex. The cone rests in an aperture of a box whose top is horizontal, and this, aided by the lead, prevents disturbance during violent winds. The top of the gauge is 2.0 feet above the ground, and it is free from all shelter during driving rains. There is an aperture at the apex of the cone, through which, as it descends, the rain-water passes to a receiving bottle within the box, and the water thus collected is measured in a graduated glass cylinder, with an internal diameter of 0.60 inch. It was measured at least once in each day, and as the apex of the cone closes the mouth of the bottle, except through the small aperture, there is little or no loss by evaporation. Each inch of snow is assumed equivalent to 0.111 inch of rain.

The transcripts from the journal and computations of results were made by Acting Master Daniel G. Major until May, 1863, and after that time by John R. Eastman, aid. These officers made daily scrutiny of the journal during their respective periods, as well for the detection of inaccuracies as for the omission of subjects proper for entry, and before the circumstances of the observation could have been forgotten by the observer.

APPENDIX C.

The observations which follow were made by Mr. Ferguson, Assistant Astronomer, Professors Hall and Harkness, and Messrs. Springer, Eastman, Rogers, and Harrison. In the column of initials H. indicates Professor Hall, and Ha. Professor Harkness. The times for all were noted by Mr. Harrison, from a chronometer in the dome of the Observatory, the several observers being upon the roof of the building surrounding it, and with unobstructed vision of the entire heavens.

The instants of apparition of every meteor were announced by a preconcerted signal, the time noted, the meteor numbered, and the initial of the observer appended. Each observer kept a record showing the comparative brightness of every meteor noted by him, and the initial and terminal points of their tracks. When the origin or disappearance did not take place near well-known stars, the distances from such stars were carefully estimated, and the places given in the table have been deduced therefrom. Most of the times of flight given in column 4 are estimates. Some few of them were also determined by the chronograph register, and these times are given in the final column and marked (C). The records are for mean time, Washington.

During the early hours of the evening of 13th, there was a light breeze from the S.W., and the sky was partially obscured by thin cirrus cloud. Towards morning of 14th the wind veered to N.W., and the obstruction to vision passed away. At commencement of the observations the barometer stood at 30.05 inches, temperature of the air 51°, and at the end the same instruments showed 30.01 inches and 36° respectively.

METEORS OBSERVED AT THE UNITED STATES NAVAL OBSERVATORY, WASHINGTON, D. C., DURING THE NIGHT OF NOVEMBER 13-14, 1863. LAT. 38° 53′ 39″ N.: LONG. 5h 8′ 11″ W.

No.	Relative mag.	Time of apparition.	Time of flight.	Origin of path.		End of path.		Observer.
				A. R.	Dec.	A. R.	Dec.	
		h. m. s.	s.	°	°	°	°	
1	4	10 10 9	0.5	106	+ 34	118	+ 37	H.
2	5	20 6	0.3	82	38	91	39	H.
3	3	26 59	0.4	0	90	270	80	E.
4	6	27 03	0.2	58	24	58	18	E.
5	4	38 08	0.4	87	22	98	22	H.
6	4	45 45	0.5	116	42	135	48	H.
7	4	51 51	0.6	75	+ 29	96	+ 38	H.
8	4	10 55 09	0.1	108	− 1	107	− 4	Ha.
*9	1	11 08 24	2.0	190	+ 62	247	+ 57	S.
10	4	19 34	0.2	88	− 2	90	− 6	Ha.
11	5	20 24	0.3	121	+ 45	137	+ 48	H.
12	1	30 25	1.0	88	8	100	5	Ha.
13	4	33 26	0.4	128	+ 51	128	+ 47	R.
14	5	34 14	0.2	67	− 12	69	− 22	Ha.
15	3	36 05	0.2	108	+ 13	117	+ 9	H.
16	5	46 49	0.3	53	8	53	2	E.
17	2	53 37	0.5	64	16	78	30	Ha.
18	3	57 03	0.5	188	71	198	61	S.
19	4	11 59 29	0.3	131	47	125	51	R.
20	3	12 00 32	0.5	152	43	160	+ 55	S.
21	3	08 01	0.7	119	9	103	− 3	H.
22	2	11 37	1.0	108	+ 2	85	8	H.
23	3	12 15	0.4	94	− 18	84	20	H.
24	4	12 41	0.4	106	− 0	97	− 3	H.

* This splendid meteor was followed by a brilliant train of light.

No.	Relative mag.	Time of apparition.	Time of flight.	Origin of path.		End of path.		Observer.
				A. R.	Dec.	A. R.	Dec.	
		h. m. s.	s.	°	°	°	°	
25	5	12 16 08	0.3	108	— 15	95	— 16	H.
26	3	16 29	0.3	135	+ 85	222	+ 78	S.
27	3	16 43	0.6	122	— 5	111	— 10	H.
28	2	21 58	1.0	4	+ 43	339	+ 34	S.
29	3	31 24	0.5	122	— 2	111	— 10	H.
30	4	31 44	0.3	116	+ 1	112	2	H.
31	3	34 09	0.5	96	— 14	81	— 15	Ha.
32	6	35 20	0.5	141	+ 16	173	+ 53	F.
33	2	40 45	0.5	104	— 23	95	— 30	Ha.
34	6	41 27	0.5	128	+ 35	134	+ 33	E.
35	5	41 40	0.4	126	21	126	16	E.
36	3	49 19	0.5	132	+ 18	122	+ 9	Ha.
37	2	51 12	0.5	114	— 2	100	— 7	Ha.
38	4	55 33	0.5	91	— 9	91	— 24	E.
39	3	55 35	0.3	230	+ 73	265	+ 72	S.
40	6	55 43	0.3	127	20	126	16	E.
41	5	58 44	0.5	181	58	178	55	E.
42	6	12 58 59	0.5	178	55	181	+ 58	E.
43	4	13 00 33	0.2	109	3	114	— 1	H.
44	3	01 35	0.3	145	65	145	+ 75	S.
45	5	01 43	0.5	178	58	217	77	F.
46	5	07 58	0.2	130	+ 7	135	+ 5	H.
47	4	08 35	0.5	114	— 2	100	— 7	Ha.
48	6	10 07	0.4	122	— 6	113	— 12	Ha.
49	6	11 12	0.2	163	+ 42	167	+ 40	E.
50	3	17 32	0.4	98	— 14	90	— 23	H.
51	3	18 48	0.5	82	+ 29	86	+ 10	Ha.
52	4	20 14	0.3	104	34	113	35	H.
53	5	20 28	0.3	233	21	146	+ 26	F.
54	5	20 41	0.3	129	6	129	— 4	E.
55	4	22 52	0.3	139	27	143	+ 32	R.
56	3	22 58	0.3	148	+ 11	149	+ 3	H.
57	5	25 44	0.3	88	— 36	83	— 39	E.
58	4	30 09	0.2	129	+ 13	125	+ 10	R.
59	4	30 20	0.2	115	— 20	108	— 23	Ha.
60	4	31 16	0.2	148	+ 23	145	+ 27	H.
61	4	33 20	0.1	97	+ 16	87	+ 7	Ha.
62	4	34 22	0.3	121	— 5	130	— 8	E.
63	4	34 55	0.2	158	+ 30	162	+ 32	R.
64	5	38 07	0.4	151	25	153	35	E.
65	3	38 18	0.2	146	15	148	10	H.
66	4	39 43	0.3	147	13	143	10	Ha.
67	6	42 06	0.1	129	23	124	17	E.
68	6	43 48	0.1	130	18	125	15	Ha.
69	5	45 47	0.3	155	57	155	+ 67	E.
70	1	45 55	0.5	85	12	71	— 2	Ha.
71	4	46 39	0.4	172	61	172	+ 73	E.
72	4	46 54	0.5	181	58	181	73	E.
73	3	47 19	0.4	150	44	158	54	H.
74	5	48 38	0.3	163	60	230	73	S.
75	5	50 04	0.3	197	+ 72	215	+ 69	R.
76	5	52 07	0.4	139	— 8	143	— 17	E.
77	4	52 30	0.2	131	+ 9	134	+ 5	H.
78	3	52 58	0.5	202	53	228	58	R.
79	3	55 50	0.3	117	+ 28	123	+ 22	H.
80	5	55 50	0.4	105	— 26	95	— 31	E.
81	4	58 15	0.4	165	+ 78	230	+ 81	S.
82	4	58 34	0.2	101	35	107	37	H.
83	4	59 01	0.1	157	+ 15	162	+ 12	Ha.
84	3	13 59 21	0.4	96	— 14	85	— 20	R.
85	4	14 00 42	0.3	107	+ 27	118	+ 28	H.
86	3	1 23	0.3	140	12	130	2	Ha.
87	1	3 28	0.1	115	28	115	38	Ha.
88	4	3 52	0.5	237	66	265	58	S.
89	4	6 32	0.3	145	17	139	9	Ha.
90	2	7 03	0.5	114	23	99	17	E.
91	4	7 34	0.3	175	51	192	52	S.
92	4	7 59	0.2	131	9	124	4	H.
93	3	9 14	0.4	144	+ 25	145	+ 5	E.
94	4	9 19	0.3	150	— 3	150	— 15	E.
95	5	11 19	0.3	128	+ 39	140	+ 40	H.
96	4	11 37	0.5	107	— 17	79	— 32	F.
97	5	14 14 21	0.3	161	+ 4	166	— 3	E.

No.	Relative mag.	Time of apparition.	Time of flight.	Origin of path.		End of path.		Observer.
				A. R.	Dec.	A. R.	Dec.	
		h. m. s.	s.	°	°	°	°	
98	5	14 14 42	0.2	102	+ 19	113	+ 21	H.
99	4	15 08	0.3	135	— 12	139	— 7	R.
100	3	20 33	0.1	160	— 4	162	7	H.
101	3	21 57	0.4	135	+ 3	135	12	E.
102	4	26 10	0.3	114	— 10	123	12	Ha.
103	4	26 23	0.5	174	+ 19	193	4	F.
104	4	26 29	0.2	149	— 3	152	9	H.
105	4	28 03	0.3	135	— 7	145	— 5	E.
106	4	28 50	0.2	165	+ 42	170	+ 49	H.
107	3	29 40	0.4	172	33	194	+ 45	H.
108	3	31 14	0.3	143	6	143	— 4	Ha.
109	3	32 05	0.3	152	43	163	+ 50	H.
110	2	32 06	0.5	99	12	100	— 27	E.
111	3	32 09	0.5	116	6	116	— 9	E.
112	4	34 15	0.3	260	70	285	+ 65	Ha.
113	3	34 48	0.4	95	+ 19	75	+ 15	R.
114	3	36 19	0.1	134	— 23	136	— 28	H.
115	3	37 34	0.3	75	+ 6	66	+ 4	R.
116	3	39 46	0.1	146	15	143	12	H.
117	3	40 37	0.4	153	33	148	20	E.
118	3	41 28	0.3	5	51	5	43	R.
119	3	42 16	0.2	125	26	117	28	H.
120	3	42 34	0.4	108	30	90	31	H.
121	4	44 19	0.5	162	47	185	56	S.
122	4	47 28	0.3	202	69	204	63	R.
123	4	48 08	0.3	101	24	108	30	H.
124	3	49 25	0.3	131	48	153	46	E. (c) 0.3s.
125	4	49 37	0.5	175	50	205	50	S.
126	3	51 35	0.4	171	51	184	65	H. (c) 0.5s.
127*	2	53 11	0.5	147	+ 22	147	+ 22	Ha.
128	3	56 10	0.2	157	— 13	158	— 18	H.
129	3	57 46	0.3	147	+ 32	147	+ 42	Ha (c) 0.5s.
130	5	14 57 54	0.2	138	— 7	143	— 10	H.
131	1	15 00 24	0.3	176	+ 6	181	+ 1	H.
132	4	3 36	0.3	128	— 2	100	— 27	Ha. (c) 0.2s.
133	4	3 36	0.2	181	+ 58	199	+ 58	E.
134	4	3 57	0.2	193	41	202	+ 40	H.
135	4	6 04	0.1	137	6	140	— 10	Ha.
136	5	7 16	0.2	179	21	174	+ 20	H.
137	4	7 36	0.3	175	10	175	+ 20	E.
138	4	9 38	0.3	162	3	166	— 6	H.
139	5	9 50	0.4	134	11	159	+ 9	E. (c) 0.7s.
140†	5	11 45	0.2	162	62	220	+ 73	S.
141	3	12 16	0.3	135	5	127	— 4	H. (c) 0.7s.
142	4	12 58	0.4	75	60	76	+ 75	E.
143	3	14 07	0.3	149	32	151	37	Ha. (c) 0.4s.
144	3	14 38	0.3	65	33	78	43	H.
145	4	15 03	0.5	181	48	207	+ 42	S.
146	4	15 24	0.3	157	7	165	— 1	Ha.
147	4	16 12	0.3	175	23	186	+ 24	E.
148	3	16 50	0.4	164	63	190	73	E.
149	4	16 59	0.2	142	+ 21	147	+ 19	H.
150	4	17 48	0.5	99	— 16	94	— 30	S.
151	4	18 19	0.2	170	+ 57	170	+ 62	Ha.
152	6	18 48	0.7	138	— 6	183	— 16	F.
153	4	19 47	0.5	190	+ 65	225	+ 55	S.
154	3	21 35	0.5	124	59	102	73	E.
155	3	24 29	0.3	144	13	141	02	H.
156	5	24 30	0.5	190	47	205	50	S.
157	2	26 10	0.3	177	71	178	79	E.
158	4	27 14	0.5	191	57	225	58	S.
159	4	28 38	0.2	146	10	152	9	H.
160	4	30 33	0.5	162	47	185	57	S.
161	5	32 14	0.5	190	46	204	51	S.
162	3	33 53	0.4	132	10	120	0	H.
163	3	39 20	0.4	110	32	127	28	E.
164	5	39 21	0.2	123	3	128	6	H.
165	5	40 57	0.5	170	60	230	72	S.
166	4	42 13	0.4	128	20	128	10	E.
167	4	15 45 18	0.5	199	+ 48	225	48	S. (c) 0.3s.

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* The track of this meteor was due north and south, and about 15′ in length. It must have been coming almost directly towards the observer

† The passage of this meteor was almost instantaneous; it was a brilliant thread of light from beginning to end.

No.	Relative mag.	Time of apparition.	Time of flight.	Origin of path.		End of path.		Observer.
				A. R.	Dec.	A. R.	Dec.	
		h. m. s.	s.	°	°	°	°	
168	4	15 45 25	0.3	205	+ 40	216	+ 40	E.
169	4	45 31	0.3	145	27	141	20	H.
170	4	50 12	0.5	162	46	195	51	S. (c) 0.9s.
171	4	52 55	0.3	125	60	104	72	E.
172	4	53 17	0.4	30	58	30	+ 40	E.
173	3	55 36	1.0	5	57	345	— 45	S.
174	3	58 27	0.3	150	24	163	+ 27	H.
175	4	59 43	0.2	193	52	201	42	E.
176	2	15 59 46	0.3	193	52	193	62	E. (c) 0.4s.
177	4	16 00 09	0.5	191	45	212	45	S.
178	2	2 12	0.4	176	17	192	13	H.
179	4	3 09	0.5	200	56	233	58	S.
180	4	8 04	0.4	126	57	102	68	E.
181	3	13 08	0.4	135	47	151	53	H.
182	4	13 19	0.4	147	14	165	+ 19	E.
183	2	14 19	0.4	148	11	142	— 3	H.
184	3	14 29	0.2	144	6	143	— 3	Ha.
185	5	16 14	0.3	175	26	183	+ 18	E.
186	2	18 35	0.4	170	+ 51	170	+ 75	E.
187	4	20 30	0.3	162	— 2	167	— 16	H.
188	3	23 29	0.2	196	+ 40	210	+ 39	H.
189	4	28 59	0.4	174	+ 44	196	+ 44	E.
190	3	32 01	0.3	134	— 7	133	— 13	H.
191	4	33 49	0.2	200	+ 9	208	+ 7	H.
192	3	34 29	0.3	175	21	185	+ 26	E.
193	4	34 43	0.5	166	23	195	— 3	F.
194	3	35 26	0.5	165	30	183	+ 35	S.
195	3	36 27	0.4	182	14	196	12	H.
196	2	37 56	0.5	144	21	131	12	H.
197	4	38 25	0.3	132	9	142	+ 8	E.
198	3	38 43	0.4	132	9	142	— 2	E.
199	4	40 18	0.2	154	19	159	+ 11	H.
200	3	42 16	0.3	167	8	174	+ 1	H.
201	4	43 31	0.3	153	7	155	— 3	E.
202	4	44 19	0.4	175	15	190	+ 12	H.
203	3	47 33	0.3	182	21	192	24	H.
204	3	48 42	0.4	148	23	148	8	E.
205	2	50 41	0.2	165	52	178	+ 60	H.
206	4	53 21	0.3	129	7	138	— 5	E.
207	3	55 39	0.4	194	18	209	+ 16	H.
208	4	57 10	0.3	174	2	186	1	E.
209	3	57 11	0.4	170	4	185	3	E.
210	2	16 57 43	0.4	159	27	170	+ 46	H.
211	2	17 01 24	0.8	152	12	184	— 2	H.
212	3	6 28	0.3	153	21	160	+ 28	H.
213	2	17 6 59	0.4	145	+ 27	130	+ 35	E.

n time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
863.	in.	in.	in.	in.	in.	in.	in.	in.
h 1	29.949	29.814	29.697	29.616	29.561	29.543	29.708	29.826
2	29.893	29.895	29.928	29.982	29.933	29.859	29.813	29.815
3	29.759	29.753	29.755	29.826	29.791	29.741	29.813	29.858
4	29.889	29.904	29.991	30.080	30.113	30.137	30.175	30.258
5	30.311	30.372	30.441	30.492	30.453	30.389	30.345	30.312
6	30.227	30.139	30.054	30.009	29.941	29.888	29.926	29.959
7	29.969	29.886	29.879	29.882	29.768	29.597	29.632	29.721
8	29.619	29.579	29.705	29.701	29.733	29.718	29.715	29.647
9	29.627	29.691	29.772	29.870	29.896	29.905	29.993	30.056
10	30.105	30.111	30.187	30.180	30.146	30.093	29.975	29.921
11	29.822	29.797	29.747	29.784	29.768	29.744	29.797	29.891
12	29.923	29.909	29.949	29.990	30.002	29.994	30.044	30.125
13	30.130	30.144	30.131	30.146	30.108	30.094	30.144	30.167
14	30.151	30.121	30.105	30.083	29.981	29.865	29.846	29.846
15	29.846	29.889	29.919	29.981	29.987	29.955	29.962	29.976
16	29.936	29.949	29.976	30.043	30.083	30.089	30.121	30.174
17	30.155	30.162	30.174	30.198	30.128	30.004	29.949	29.991
18	29.863	29.835	29.875	29.961	30.041	30.058	30.127	30.203
19	30.256	30.287	30.340	30.400	30.408	30.360	30.365	30.404
20	30.379	30.369	30.373	30.430	30.443	30.407	30.444	30.474
21	30.501	30.499	30.504	30.495	30.402	30.346	30.269	30.230
22	30.195	30.148	30.134	30.137	30.106	30.021	30.000	30.019
23	30.052	30.057	30.069	30.110	30.095	30.086	30.097	30.151
24	30.137	30.086	30.086	30.051	29.981	29.874	29.835	29.758
25	29.646	29.586	29.519	29.500	29.483	29.484	29.528	29.633
26	29.628	29.666	29.694	29.774	29.804	29.828	29.888	29.961
27	30.009	30.056	30.099	30.130	30.119	30.061	30.052	30.063
28	30.040	29.986	29.936	29.847	29.703	29.591	29.575	29.610
29	29.573	29.589	29.701	29.793	29.872	29.902	29.999	30.079
30	30.153	30.172	30.195	30.232	30.207	30.140	30.106	30.081
31	30.024	29.886	29.999	29.693	29.610	29.582	29.606	29.623
ly means.	29.996	29.978	29.991	30.013	29.989	29.947	29.963	29.994

n time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
863.	in.	in.	in.	in.	in.	in.	in.	in.
1	29.625	29.623	29.691	29.791	29.871	29.860	29.835	29.795
2	29.743	29.623	29.538	29.431	29.336	29.280	29.333	29.547
3	29.612	29.696	29.726	29.789	29.825	29.831	29.887	29.978
4	30.047	30.097	30.119	30.107	30.021	29.904	29.804	29.761
5	29.651	29.599	29.625	29.659	29.671	29.693	29.738	29.762
6	29.795	29.778	29.781	29.792	29.793	29.766	29.746	29.773
7	29.776	29.741	29.791	29.854	29.868	29.925	30.001	30.058
8	30.092	30.127	30.144	30.167	30.151	30.141	30.150	30.187
9	30.203	30.195	30.211	30.245	30.234	30.193	30.190	30.235
10	30.252	30.248	30.281	30.269	30.187	30.105	30.083	30.115
11	30.077	30.041	30.053	30.070	30.003	29.930	29.889	29.895
12	29.889	29.864	29.852	29.824	29.790	29.765	29.774	29.757
13	29.881	29.882	29.952	30.025	30.039	30.025	30.047	30.087
14	30.110	30.124	30.145	30.137	30.119	30.055	30.057	30.049
15	30.027	29.985	29.999	29.968	29.884	29.718	29.683	29.627
16	29.604	29.617	29.639	29.657	29.685	29.697	29.731	29.773
17	29.786	29.783	29.823	29.865	29.889	29.878	29.907	29.954
18	29.964	29.974	29.987	29.993	29.980	29.949	29.974	29.964
19	29.951	29.934	29.931	29.953	29.949	29.882	29.888	29.934
20	29.950	29.963	29.988	30.026	30.053	30.061	30.144	30.188
21	30.262	30.276	30.310	30.350	30.333	30.299	30.284	30.283
22	30.261	30.250	30.258	30.259	30.210	30.155	30.107	30.079
23	30.044	29.994	29.967	29.905	29.827	29.731	29.681	29.663
24	29.620	29.561	29.491	29.441	29.436	29.475	29.533	29.556
25	29.527	29.491	29.628	29.697	29.709	29.717	29.770	29.748
26	29.922	29.961	29.991	30.039	30.002	29.935	29.925	29.979
27	30.029	30.041	30.067	30.074	30.013	29.938	29.900	29.915
28	29.889	29.854	29.854	29.841	29.808	29.776	29.742	29.734
29	29.706	29.665	29.655	29.684	29.567	29.623	29.640	29.677
30	29.705	29.713	29.723	29.740	29.782	29.770	29.801	29.874
ly means.	29.900	29.889	29.907	29.922	29.901	29.869	29.875	29.898

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
May 1	29.881	29.881	29.911	29.961	29.927	29.881	29.869	29.921
2	29.911	29.901	29.912	29.911	29.874	29.836	29.825	29.869
3	29.861	29.868	29.897	29.907	29.886	29.843	29.835	29.876
4	29.849	29.820	29.803	29.793	29.748	29.691	29.683	29.716
5	29.696	29.668	29.686	29.675	29.668	29.605	29.669	29.709
6	29.603	29.717	29.741	29.757	29.766	29.733	29.704	29.730
7	29.690	29.671	29.701	29.730	29.722	29.707	29.729	29.777
8	29.733	29.774	29.807	29.827	29.847	29.822	29.865	29.897
9	29.897	29.897	29.939	29.994	29.969	29.935	29.932	29.959
10	29.977	29.997	30.027	30.056	30.032	29.988	29.973	29.989
11	29.976	29.971	30.023	30.067	30.021	29.975	29.951	29.978
12	29.985	30.001	30.025	30.035	29.967	29.915	29.870	29.913
13	29.895	29.881	29.891	29.902	29.863	29.811	29.822	29.868
14	29.833	29.805	29.786	29.792	29.732	29.699	29.721	29.849
15	29.881	29.890	29.924	29.967	29.960	29.932	29.902	29.947
16	29.938	29.919	29.935	29.930	29.874	29.811	29.779	29.805
17	29.797	29.733	29.743	29.714	29.684	29.629	29.666	29.764
18	29.820	29.837	29.879	29.911	29.905	29.886	29.905	29.999
19	30.040	30.058	30.092	30.121	30.115	30.061	30.031	30.062
20	30.088	30.103	30.145	30.161	30.141	30.093	30.068	30.068
21	30.099	30.126	30.169	30.198	30.186	30.147	30.122	30.134
22	30.122	30.135	30.148	30.158	30.123	30.111	30.013	30.026
23	30.007	29.979	29.990	29.979	29.927	29.872	29.782	29.835
24	29.813	29.799	29.791	29.776	29.763	29.721	29.724	29.823
25	29.883	29.919	29.970	30.001	30.035	30.018	30.009	30.040
26	30.034	30.040	30.047	30.052	30.045	30.015	29.990	30.033
27	30.033	30.033	30.069	30.121		30.082	30.077	30.099
28	30.099	30.099	30.128	30.143	30.107	30.049	30.019	30.044
29	30.027	30.007	30.019	30.013	29.965	29.883	29.878	29.836
30	29.788	29.748	29.713	29.683	29.625	29.560	29.529	29.468
31	29.544	29.501	29.502	29.490	29.537	29.395	29.409	29.475
Hourly means.	29.897	29.896	29.920	29.926	29.900	29.862	29.850	29.888

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
June 1	29.507	29.523	29.529	29.540	29.509	29.452	29.510	29.587
2	29.583	29.613	29.661	29.706	29.691	29.661	29.663	29.716
3	29.765	29.749	29.779	29.893	29.781	29.772	29.770	29.825
4	29.844	29.847	29.908	29.940	29.940	29.901	29.902	29.927
5	29.938	29.944	29.962	29.969	29.959	29.916	29.889	29.928
6	29.905	29.897	29.907	29.921	29.906	29.900	29.895	29.920
7	29.926	29.959	29.984	29.993	29.974	29.963	29.973	30.009
8	29.998	29.975	29.962	29.965	29.915	29.909	29.909	29.983
9	29.905	29.904	29.904	29.891	29.821	29.763	29.759	29.869
10	29.857	29.871	29.902	29.932	29.909	29.875	29.867	29.874
11	29.861	29.844	29.854	29.856	29.838	29.805	29.783	29.783
12	29.773	29.766	29.796	29.827	29.837	29.817	29.847	29.881
13	29.903	29.909	29.911	29.933	29.925	29.894	29.928	29.981
14	30.023	30.034	30.042	30.070	30.082	30.035	29.981	30.005
15	29.979	29.961	29.951	29.940	29.879	29.795	29.735	29.779
16	29.785	29.835	29.926	29.983	29.955	29.920	29.880	29.914
17	29.906	29.889	29.823	29.793	29.697	29.594	29.524	29.587
18	29.782	29.567	29.591	29.612	29.578	29.507	29.601	29.639
19	29.627	29.624	29.641	29.676	29.684	29.684	29.741	29.793
20	29.809	29.829	29.864	29.902	29.907	29.897	29.891	29.894
21	29.890	29.884	29.882	29.884	29.879	29.838	29.816	29.839
22	29.830	29.831	29.853	29.884	29.869	29.845	29.841	29.875
23	29.876	29.889	29.937	29.956	29.972	29.958	29.973	30.009
24	30.031	30.031	30.089	30.111	30.105	30.096	30.093	30.109
25	30.114	30.152	30.162	30.171	30.146	30.143	30.107	30.111
26	30.088	30.051	30.051	30.047	30.042	30.023	30.003	30.041
27	30.053	30.074	30.087	30.112	30.102	30.081	30.079	30.091
28	30.071	30.059	30.061	30.073	30.056	30.007	29.972	29.985
29	29.962	29.949	29.939	29.945	29.929	29.898	29.901	29.903
30	29.910	29.907	29.931	29.935	29.931	29.895	29.885	29.912
Hourly means.	29.883	29.879	29.893	29.912	29.894	29.861	29.857	29.892

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
ly 1	29.923	29.933	29.943	29.963	29.975	29.942	29.920	29.987
2	29.988	29.978	30.010	30.038	30.040	30.005	30.075	30.003
3	30.025	30.016	30.041	30.062	30.044	30.001	29.981	30.011
4	30.016	30.017	30.017	30.023	29.991	29.991	29.870	29.965
5	29.960	29.938	29.923	29.918	29.915	29.873	29.848	29.867
6	29.875	29.843	29.873	29.895	29.903	29.876	29.853	29.878
7	29.877	29.883	29.883	29.911	29.901	29.862	29.833	29.843
8	29.825	29.798	29.781	29.748	29.727	29.690	29.678	29.693
9	29.683	29.634	29.644	29.658	29.630	29.613	29.615	29.643
10	29.631	29.631	29.669	29.691	29.690	29.675	29.700	29.743
11	29.762	29.778	29.788	29.882	29.814	29.789	29.795	29.835
12	29.860	29.851	29.873	29.900	29.917	29.877	29.898	29.929
13	29.933	29.924	29.915	29.971	29.901	29.861	29.833	29.832
14	29.786	29.758	29.778	29.795	29.824	29.751	29.735	29.782
15	29.811	29.838	29.871	29.901	29.916	29.898	29.887	29.823
16	29.935	29.928	29.936	29.977	. .	29.959	29.951	29.983
17	29.982	29.995	30.005	30.022	30.045	30.056	30.065	30.100
18	30.088	30.104	30.116	30.147	30.149	30.119	30.092	30.112
19	30.121	30.109	30.101	30.112	30.092	30.045	30.031	30.040
20	30.022	30.006	30.004	29.981	29.933	29.873	29.817	29.785
21	29.750	29.678	29.638	29.685	29.719	29.712	29.749	29.826
22	29.868	29.891	29.936	29.989	29.968	29.936	29.923	29.957
23	29.963	29.986	29.999	29.999	29.996	29.970	29.943	29.959
24	29.967	29.955	29.980	29.998	29.998	29.966	29.945	29.977
25	29.961	29.953	29.946	29.950	29.906	29.829	29.712	29.801
26	29.796	29.773	29.813	29.823	29.815	29.765	29.765	29.815
27	29.906	29.806	29.793	29.819	29.818	29.800	29.843	29.877
28	29.905	29.915	29.942	29.997	29.995	29.952	29.966	29.989
29	29.967	29.975	29.986	30.033	30.063	30.020	30.043	30.045
30	30.041	29.995	29.996	30.024	30.003	29.965	29.939	29.982
31	29.973	29.984	29.995	30.002	29.999	29.944	29.945	29.982
urly means.	29.909	29.867	29.910	29.933	29.923	29.891	29.881	29.912

ean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
gust 1	29.957	29.995	29.987	30.000	30.012	29.978	29.966	29.992
2	29.985	30.001	30.020	30.033	30.035	30.011	29.994	30.021
3	30.019	30.022	30.045	30.062	30.071	30.023	30.015	30.054
4	30.045	30.067	30.085	30.101	30.081	29.994	30.074	30.074
5	30.058	30.037	30.062	30.065	30.029	29.954	29.928	29.934
6	29.915	29.911	29.909	29.918	29.924	29.899	29.904	29.929
7	29.925	29.925	29.945	29.976	29.948	29.890	29.870	29.893
8	29.866	29.867	29.873	29.864	29.841	29.805	29.790	29.809
9	29.825	29.817	29.850	29.865	29.875	29.829	29.829	29.854
10	29.857	29.879	29.919	29.927	29.918	29.899	29.886	29.911
11	29.917	29.899	29.922	29.941	29.904	29.859	29.841	29.889
12	29.871	29.918	29.952	29.987	29.997	29.954	29.991	30.019
13	30.014	30.015	30.059	30.081	30.089	30.050	30.051	30.066
14	30.054	30.053	30.044	30.033	30.003	29.970	29.937	29.961
15	29.980	29.955	29.978	30.004	30.009	29.977	29.967	29.975
16	29.997	29.999	29.983	29.988	29.969	29.894	29.874	29.923
17	29.886	29.873	29.917	29.965	29.959	29.972	29.992	30.075
18	30.118	30.152	30.100	30.217	30.223	30.109	30.181	30.181
19	30.168	30.147	30.140	30.124	30.196	30.019	29.991	29.988
20	29.953	29.923	29.936	29.940	29.891	29.856	29.841	29.851
21	29.856	29.733	29.829	29.857	29.823	29.780	29.758	29.799
22	29.792	29.807	29.811	29.832	29.808	29.787	29.797	29.830
23	29.821	29.829	29.870	29.927	29.926	29.876	29.899	29.857
24	29.960	29.965	29.967	29.995	29.985	29.915	29.927	29.944
25	29.942	29.935	29.947	29.967	29.921	29.874	29.857	29.883
26	29.911	29.951	29.991	30.017	30.027	30.000	30.116	30.069
27	30.061	30.061	30.086	30.094	30.058	29.989	29.970	29.970
28	29.911	29.913	29.910	29.912	29.860	29.819	29.797	29.819
29	29.889	29.769	29.795	29.825	29.795	29.777	29.853	29.978
30	30.064	30.157	30.199	30.238	30.229	30.197	30.199	30.229
31	30.250	30.238	30.265	30.281	30.263	30.230	30.213	30.220
urly means.	29.964	29.962	29.981	30.001	29.989	29.942	29.945	29.968

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
September 1	30.217	30.218	30.218	30.209	30.172	30.131	30.110	30.118
2	30.135	30.112	30.118	30.131	30.097	30.030	30.015	30.015
3	29.997	29.978	29.960	29.951	29.909	29.868	29.857	29.893
4	29.897	29.894	29.953	30.003	29.995	29.956	29.967	29.994
5	30.012	30.036	30.063	30.089	30.054	30.009	29.884	30.002
6	29.993	29.979	29.993	29.996	29.984	29.946	29.936	29.979
7	29.991	30.008	30.045	30.043	30.028	30.015	30.025	30.071
8	30.069	30.086	30.098	30.136	30.098	30.045	30.027	30.028
9	30.041	30.051	30.059	30.076	30.055	30.083	30.082	30.139
10	30.170	30.191	30.243	30.285	30.267	30.238	30.214	30.227
11	30.240	30.243	30.234	30.239	30.176	30.128	30.089	30.080
12	30.040	30.003	29.966	29.965	29.935	29.858	29.809	29.862
13	29.846	29.858	29.873	29.870	29.877	29.843	29.885	29.953
14	29.975	29.986	30.039	30.107	30.122	30.094	30.100	30.143
15	30.155	30.181	30.204	30.234	30.209	30.151	30.133	30.178
16	30.165	30.161	30.157	30.161	30.129	30.163	30.037	30.046
17	30.019	30.012	30.003	29.990	29.945	29.882	29.813	29.805
18	29.706	29.614	29.541	29.428	29.363	29.472	29.577	29.675
19	29.716	29.761	29.831	29.835	29.837	29.818	29.892	29.892
20	29.907	29.930	29.972	30.010	29.998	29.986	30.002	30.060
21	30.076	30.105	30.127	30.128	30.095	30.034	30.035	30.065
22	30.121	30.166	30.262	30.331	30.353	30.335	30.336	30.431
23	30.444	30.468	30.495	30.507	30.450	30.384	30.343	30.323
24	30.305	30.265	30.234	30.216	30.155	30.059	30.022	30.005
25	29.967	29.927	29.910	29.907	29.919	29.905	29.956	29.999
26	29.996	29.983	30.009	30.025	30.001	29.952	29.968	30.007
27	30.027	30.052	30.076	30.105	30.074	30.026	30.023	30.057
28	30.084	30.080	30.109	30.139	30.109	30.081	30.041	30.070
29	30.092	30.099	30.117	30.119	30.107	30.166	30.076	30.103
30	30.113	30.092	30.110	30.155	30.197	30.091	30.085	30.114
Hourly means.	30.050	30.051	30.067	30.080	30.057	30.025	30.011	30.044

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
October 1	30.113	30.111	30.109	30.129	30.088	30.042	30.028	29.999
2	29.975	29.909	29.849	29.799	29.684	29.521	29.488	29.557
3	29.661	29.719	29.802	29.811	29.798	29.747	29.748	29.757
4	29.733	29.723	29.789	29.843	29.841	29.810	29.829	29.870
5	29.891	29.924	29.980	30.032	30.027	30.003	30.067	30.109
6	30.109	30.115	30.121	30.140	30.086	30.055	30.052	30.076
7	30.044	30.011	30.027	30.044	30.001	29.937	29.913	29.889
8	29.846	29.807	29.806	29.839	29.823	29.810	29.866	29.925
9	29.938	29.980	30.007	30.025	29.981	29.938	29.957	29.987
10	29.966	29.995	30.008	30.041	30.041	30.017	30.036	30.088
11	30.086	30.083	30.139	30.147	30.132	30.081	30.087	30.091
12	29.493	30.072	30.087	30.097	30.045	29.991	29.984	30.020
13	30.033	30.043	30.060	30.116	30.103	30.067	30.061	30.101
14	30.106	30.101	30.102	30.121	30.100	30.073	30.053	30.057
15	30.132	30.064	29.991	29.987	29.951	29.901	29.889	29.874
16	29.833	29.816	29.797	29.788	29.709	29.614	29.546	29.613
17	29.631	29.661	29.731	29.774	29.791	29.795	29.833	29.854
18	29.852	29.851	29.856	29.867	29.831	29.775	29.799	29.816
19	29.786	29.876	29.820	29.829	29.866	29.883	29.906	29.953
20	29.937	29.946	29.989	30.033	29.982	29.947	29.958	29.979
21	29.989	29.994	30.004	30.027	30.022	30.009	30.081	30.138
22	30.168	30.204	30.267	30.319	30.274	30.241	30.236	30.244
23	30.221	30.186	30.189	30.139	30.059	29.996	29.975	29.990
24	29.973	29.970	30.002	30.116	30.102	30.118	30.156	30.290
25	30.211	30.240	30.271	30.362	30.303	30.302	30.354	30.365
26	30.357	30.364	30.306	30.426	30.366	30.295	30.318	30.327
27	30.306	30.300	30.290	30.310	30.262	30.219	30.234	30.250
28	30.248	30.240	30.268	30.324	30.284	30.266	30.292	30.317
29	30.302	30.332	30.359	30.385	30.344	30.280	30.263	30.275
30	30.215	30.158	30.147	30.161	30.099	30.043	30.010	30.000
31	29.951	29.919	29.889	29.939	29.953	30.000	30.109	30.194
Hourly means.	30.004	30.023	30.034	30.064	30.037	29.993	30.004	30.036

ean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
vember 1	30.217	30.227	30.280	30.320	30.291	30.254	30.290	30.311
2	30.325	30.329	30.340	30.360	30.304	30.284	30.240	30.203
3	30.155	30.095	30.050	30.061	30.024	30.004	30.024	30.083
4	30.121	30.175	30.230	30.280	30.247	30.198	30.183	30.186
5	30.114	30.037	30.003	29.955	29.807	29.749	29.739	29.705
6	29.666	29.689	29.719	29.788	29.770	29.814	29.940	30.019
7	30.025	30.025	30.003	30.010	29.887	29.769	29.755	29.767
8	29.781	29.791	29.824	29.871	29.883	29.930	30.005	30.066
9	30.067	30.054	30.077	30.085	30.024	29.994	30.041	30.095
10	30.110	30.164	30.197	30.263	30.273	30.265	30.287	30.311
11	30.309	30.290	30.257	30.231	30.109	30.013	29.969	29.955
12	29.965	29.966	29.987	30.008	29.949	29.902	29.914	29.918
13	29.903	29.914	29.933	29.956	29.934	29.894	29.905	29.903
14	29.917	29.920	29.920	29.911	29.828	29.768	29.711	29.704
15	29.685	29.637	29.583	29.584	29.622	29.659	29.732	29.776
16	29.811	29.831	29.844	29.878	29.836	29.815	29.855	29.869
17	29.819	29.800	29.791	29.769	29.678	29.628	29.609	29.616
18	29.624	29.667	29.713	29.767	29.759	29.739	29.778	29.879
19	29.788	29.811	29.860	29.906	29.894	29.885	29.877	29.870
20	29.856	29.857	29.856	29.867	29.805	29.798	29.889	29.961
21	29.959	29.939	29.949	29.943	29.869	- -	29.834	29.853
22	29.907	29.999	30.097	30.185	30.211	30.224	30.290	30.359
23	30.387	30.407	30.426	30.478	30.435	30.387	30.368	30.336
24	30.284	30.195	30.098	30.039	29.947	29.858	29.815	29.807
25	29.747	29.766	29.819	29.909	29.881	29.824	29.871	29.935
26	30.007	30.079	30.132	30.236	30.245	30.239	30.275	30.374
27	30.274	30.282	30.288	30.300	30.238	30.199	30.185	30.139
28	30.088	29.999	29.911	29.851	29.731	29.678	29.678	29.673
29	29.646	29.699	29.784	29.869	29.881	29.893	29.949	29.995
30	30.026	30.070	30.136	30.192	30.220	30.245	30.332	30.383
rly means.	29.986	29.990	30.003	30.029	29.986	29.962	29.978	30.002

ean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	in.	in.	in.	in.	in.	in.	in.	in.
ember 1	30.424	30.413	30.427	30.477	30.317	30.348	30.330	30.323
2	30.274	29.195	30.166	30.109	30.024	29.982	30.029	30.104
3	30.179	30.230	30.269	30.359	30.358	30.302	30.306	30.279
4	30.236	30.210	30.190	30.171	30.087	30.042	30.045	30.052
5	30.169	30.051	30.057	30.091	30.068	30.046	30.064	30.121
6	30.176	30.267	30.382	30.443	30.510	30.505	30.579	30.627
7	30.642	30.654	30.667	30.674	30.630	30.583	30.575	30.553
8	30.506	30.567	30.441	30.427	30.329	30.261	30.226	30.206
9	30.157	30.097	30.079	30.079	30.031	30.022	30.094	30.127
10	30.153	30.205	30.288	30.348	30.340	30.321	30.368	30.407
11	30.413	30.416	30.408	30.417	30.351	30.371	30.248	30.212
12	30.180	30.156	30.140	30.148	30.095	30.053	30.035	29.981
13	29.911	29.723	29.529	29.575	29.578	29.606	29.636	29.665
14	29.549	29.439	29.381	29.329	29.290	29.343	29.515	29.666
15	29.773	29.868	29.917	30.015	30.049	30.080	30.160	30.215
16	30.264	30.307	30.370	30.405	30.409	30.385	30.380	30.376
17	30.317	30.196	30.103	30.068	29.944	29.880	29.829	29.735
18	29.638	29.624	29.635	29.679	29.677	29.687	29.797	29.839
19	29.889	29.913	29.927	30.009	30.014	30.031	30.065	30.189
20	30.086	30.113	30.133	30.143	30.139	30.114	30.149	30.163
21	30.159	30.129	30.131	30.162	30.075	29.988	29.933	29.940
22	29.876	29.861	29.847	29.863	29.850	29.855	29.897	29.918
23	29.926	29.922	29.949	30.017	30.009	30.020	30.066	30.096
24	30.109	30.144	30.179	30.220	30.224	30.219	30.274	30.321
25	30.336	30.356	30.391	30.460	30.439	30.409	30.437	30.457
26	30.464	30.477	30.460	30.471	30.426	30.380	30.354	30.355
27	30.279	30.221	30.180	30.174	30.139	30.091	30.091	30.056
28	30.016	29.889	29.824	29.755	- -	29.547	29.578	29.621
29	29.641	29.701	29.764	29.846	29.869	29.847	29.897	29.957
30	29.992	30.061	30.150	30.200	30.194	30.181	30.255	30.260
31	30.223	30.258	30.217	30.185	30.104	29.883	29.813	29.669
rly means.	30.128	30.086	30.116	30.139	30.119	30.077	30.098	30.116

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
January 1	35.3	33.0	29.0	30.8	39.2	44.5	34.5	30.0
2	28.0	25.6	23.8	26.0	44.0	48.0	40.0	29.8
3	26.8	25.0	23.0	26.4	44.2	52.0	42.0	36.0
4	33.0	33.0	33.0	42.0	54.0	57.0	50.0	47.0
5	41.0	40.0	34.5	36.5	49.0	55.5	45.0	40.5
6	39.0	37.0	32.5	35.0	45.5	45.5	40.8	38.0
7	35.5	32.5	28.4	29.0	29.6	30.5	26.0	23.5
8	21.5	20.5	20.4	24.5	27.2	28.5	27.0	27.0
9	25.0	25.4	26.0	28.5	35.8	39.5	32.0	31.8
10	24.5	28.0	31.0	36.2	37.8	38.6	36.8	37.0
11	34.5	32.5	31.2	34.5	37.0	44.4	40.8	38.0
12	35.8	34.0	32.4	36.5	41.6	44.4	35.0	33.0
13	31.3	30.5	31.2	36.2	41.0	41.2	37.0	35.0
14	37.0	38.0	36.8	37.2	40.1	44.8	49.0	58.0
15	56.5	56.8	56.0	57.4	60.5	62.2	57.0	57.5
16	58.0	57.0	56.5	51.5	42.0	39.5	33.5	29.0
17	25.7	23.0	21.5	22.8	26.3	27.6	24.0	20.8
18	18.8	16.5	15.0	21.3	28.5	31.5	25.0	20.8
19	19.0	17.0	16.8	23.0	35.0	39.4	31.0	28.2
20	25.4	25.0	26.0	30.0	34.0	34.8	34.2	34.2
21	34.0	37.0	37.0	37.6	40.5	40.5	40.0	39.0
22	38.5	38.0	38.0	38.2	41.0	41.4	40.0	38.0
23	38.0	37.5	37.8	38.0	42.0	51.5	48.0	41.5
24	41.2	39.0	37.5	40.8	46.7	47.3	44.5	43.0
25	42.4	42.0	42.0	42.0	48.0	49.0	47.0	44.3
26	39.0	39.4	39.6	41.6	52.5	54.5	52.3	52.0
27	51.4	52.5	53.6	53.4	50.5	46.5	44.0	40.5
28	38.4	35.0	33.5	33.4	33.4	32.2	31.6	31.0
29	32.5	33.0	31.2	30.0	33.0	38.5	34.0	31.4
30	28.4	25.0	23.5	27.4	36.0	40.0	35.5	33.0
31	31.4	35.4	33.2	33.3	42.4	43.4	37.0	36.0
Hourly means.	34.41	33.68	32.64	34.87	43.66	43.04	38.53	36.25

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
February 1	33.0	32.0	31.2	35.0	46.4	52.0	45.4	47.0
2	47.6	44.0	42.0	38.8	36.4	36.6	32.0	28.0
3	26.5	26.0	25.5	22.0	25.5	25.5	18.0	13.8
4	11.5	10.0	9.0	11.5	22.5	21.8	18.0	16.0
5	16.0	15.5	15.0	17.6	21.6	29.3	37.0	40.0
6	45.4	46.0	42.0	38.0	36.6	39.3	33.5	31.3
7	28.0	25.6	24.5	28.2	35.4	38.4	35.6	30.8
8	29.0	28.5	27.5	31.0	43.6	48.0	42.6	39.0
9	36.4	34.6	33.8	38.4	50.5	54.5	45.0	42.5
10	38.0	37.8	38.0	45.0	59.2	45.0	39.0	38.0
11	34.5	32.5	31.8	34.5	36.8	36.0	52.5	52.3
12	33.0	33.2	34.8	36.4	44.0	55.0	53.8	42.0
13	38.0	35.0	34.2	36.0	42.0	43.8	39.0	32.5
14	29.8	30.0	29.0	32.4	40.0	40.6	36.5	36.3
15	36.5	38.0	40.0	42.0	46.8	54.2	51.0	44.0
16	38.8	36.5	32.2	41.5	47.5	49.6	43.6	35.5
17	35.5	34.0	33.0	31.5	32.5	33.0	30.5	29.8
18	29.5	27.3	28.8	30.2	33.2	34.5	34.0	35.5
19	36.2	38.0	39.0	37.8	40.0	41.8	40.0	39.6
20	41.0	44.0	42.5	48.6	51.5	48.5	45.0	39.2
21	36.5	35.0	34.6	38.5	40.8	40.5	35.0	30.5
22	28.8	21.0	19.0	19.0	18.5	20.3	19.0	21.0
23	17.8	16.8	17.0	22.0	31.0	34.0	29.0	21.0
24	15.0	16.0	17.0	21.0	23.0	36.8	33.5	27.0
25	23.8	20.0	19.0	25.0	39.6	44.5	39.0	35.5
26	32.0	34.0	36.4	38.0	39.0	39.8	41.5	40.0
27	41.2	44.0	48.0	51.6	59.0	58.0	54.0	48.0
28	43.0	36.0	38.5	38.5	44.0	43.5	41.5	39.5
Hourly means.	32.23	31.12	30.83	33.21	38.82	40.88	38.02	34.84

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
March 1	37.0	37.0	36.5	37.2	42.0	56.0	48.5	44.0
2	39.8	36.2	31.8	39.6	50.8	52.0	47.5	42.0
3	39.5	37.0	36.5	42.0	49.0	35.5	37.0	35.2
4	33.0	32.5	30.5	32.0	31.0	31.6	29.5	27.0
5	24.4	20.0	18.5	26.0	31.0	35.0	32.0	28.5
6	28.0	29.5	32.0	34.5	44.0	48.6	45.0	42.0
7	41.0	40.5	40.0	41.7	48.5	57.0	52.0	50.0
8	38.9	39.0	35.0	35.3	38.0	47.0	46.0	43.0
9	40.0	39.0	38.3	45.8	51.0	53.5	48.0	41.5
10	41.0	40.0	38.0	36.8	32.8	32.6	32.0	31.5
11	32.0	31.5	31.0	33.0	43.6	49.0	45.0	37.8
12	35.0	32.2	29.4	35.0	34.0	30.6	29.8	28.5
13	24.0	23.0	22.0	27.0	29.0	28.3	27.0	23.6
14	22.5	21.5	21.5	30.6	41.0	42.0	38.0	33.0
15	31.5	30.5	30.0	35.0	35.5	32.0	27.5	25.3
16	25.0	25.0	24.2	24.6	28.5	30.0	31.0	25.0
17	23.0	22.0	21.5	30.4	41.5	48.5	46.8	42.5
18	40.0	40.0	37.8	44.0	41.5	43.2	43.5	35.5
19	31.5	29.5	27.0	29.0	31.0	35.0	32.0	30.0
20	30.0	30.5	30.5	29.6	31.5	33.0	34.2	30.8
21	29.0	26.0	25.3	29.0	33.5	35.5	36.0	35.0
22	34.8	36.0	35.0	38.0	48.5	57.0	55.0	46.0
23	41.0	40.0	39.5	44.5	54.5	52.0	48.5	43.0
24	41.8	41.0	41.5	44.0	51.4	57.4	54.0	50.5
25	52.0	53.0	55.0	61.5	63.5	57.0	53.0	47.5
26	41.0	38.4	39.0	39.5	40.6	42.0	41.5	38.0
27	34.5	33.0	32.0	39.5	44.0	50.0	46.0	41.0
28	39.5	39.5	39.0	38.3	39.5	44.5	45.0	42.5
29	39.0	38.0	36.0	36.5	37.6	38.0	34.0	31.0
30	29.0	28.0	28.0	36.0	47.0	52.0	45.5	40.8
31	39.5	35.0	33.0	33.6	35.5	37.5	39.2	36.0
Hourly means.	34.78	33.04	32.75	36.44	40.99	43.33	40.97	37.03

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
April 1	37.5	36.8	31.0	30.5	33.0	38.0	41.0	34.5
2	34.5	35.5	38.0	46.2	59.0	64.8	60.0	45.5
3	44.5	42.0	36.0	47.0	52.5	52.5	49.0	42.5
4	34.5	30.5	29.4	34.3	40.5	40.0	37.5	31.5
5	31.0	31.6	32.0	32.6	34.6	36.0	35.0	37.5
6	36.2	33.5	31.5	37.8	42.0	45.0	45.0	37.6
7	39.4	39.2	37.0	39.0	42.6	43.5	41.5	39.5
8	38.5	37.0	35.0	37.0	43.0	42.5	41.5	37.8
9	37.0	36.5	36.5	41.8	48.6	52.0	49.5	41.0
10	36.5	32.8	32.5	50.5	60.2	63.5	57.0	50.0
11	48.0	46.4	45.5	57.0	69.0	71.0	66.0	60.0
12	55.8	53.0	50.0	60.3	66.5	67.5	60.5	54.0
13	54.0	50.2	46.0	45.5	47.0	49.3	49.0	42.5
14	38.5	34.0	32.4	48.8	58.5	60.0	55.0	50.0
15	48.0	43.0	43.4	43.5	46.5	47.6	49.3	49.2
16	50.0	48.5	46.5	49.0	51.0	50.0	49.0	48.6
17	48.5	48.0	48.0	53.5	56.0	56.0	54.0	52.0
18	51.0	49.0	48.0	52.7	57.5	60.0	58.0	52.0
19	55.5	50.0	45.0	58.2	66.8	69.5	63.0	57.0
20	53.2	52.0	50.0	54.7	58.0	56.0	49.6	48.0
21	44.0	43.0	41.0	42.0	48.8	49.6	48.0	44.0
22	40.0	36.0	36.0	42.6	52.0	57.4	53.5	51.0
23	48.5	47.3	47.4	46.6	47.2	50.2	52.5	50.5
24	48.0	47.0	46.0	48.5	53.0	54.3	53.5	51.6
25	50.0	47.0	51.0	51.4	56.0	60.0	58.5	50.5
26	44.0	39.0	39.0	48.5	56.0	61.0	61.5	52.0
27	46.5	39.0	39.0	57.5	66.5	65.0	63.0	57.0
28	50.8	46.0	46.6	59.5	56.0	55.5	55.4	54.0
29	54.5	53.5	53.5	56.8	65.4	66.5	62.8	57.5
30	54.0	53.0	52.0	56.5	62.0	63.5	57.4	54.6
Hourly means.	45.08	42.68	41.51	47.66	53.19	54.92	52.55	47.78

time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
63.	°	°	°	°	°	°	°	°
1	49.5	46.5	45.5	57.2	67.2	70.6	67.0	59.0
2	55.0	53.5	52.6	65.5	72.5	76.5	72.5	61.8
3	58.0	56.0	55.0	68.0	75.5	76.0	70.0	67.0
4	62.0	59.0	58.4	64.0	65.0	73.5	72.5	63.0
5	60.0	58.0	58.5	63.0	67.0	64.0	54.3	49.5
6	46.5	45.0	43.5	44.5	46.0	47.4	44.0	43.5
7	43.5	43.0	42.5	44.2	47.5	49.0	48.0	46.8
8	46.5	46.0	46.2	46.5	46.8	49.2	48.0	47.5
9	46.0	47.0	46.2	57.8	65.0	69.3	66.8	59.0
10	55.5	51.0	49.0	67.4	79.0	81.0	75.5	66.3
11	60.5	58.0	53.0	70.2	83.5	85.6	79.6	71.3
12	64.5	62.5	61.0	75.6	86.8	85.5	79.0	73.5
13	67.0	63.0	60.8	73.0	81.5	79.5	65.5	64.0
14	63.0	62.0	60.5	62.5	70.6	74.5	65.5	57.0
15	51.0	51.0	49.5	58.0	64.5	68.5	67.4	55.2
16	52.0	51.5	52.5	65.5	71.0	72.5	69.0	61.5
17	60.0	58.0	58.0	70.0	75.3	79.0	71.0	64.5
18	58.0	50.0	49.5	61.5	65.5	66.8	63.6	53.0
19	50.0	47.5	48.0	59.2	67.0	73.0	73.0	62.4
20	57.5	52.5	51.0	66.5	77.4	79.0	72.0	65.0
21	59.0	55.4	54.5	72.0	82.5	85.5	79.0	66.4
22	61.0	60.0	59.0	75.5	87.0	87.5	80.2	70.2
23	62.5	61.0	60.0	74.5	86.2	87.4	81.0	71.0
24	65.0	61.0	64.0	74.0	84.6	88.3	79.0	67.5
25	59.0	55.5	54.0	55.5	56.2	60.5	59.4	57.2
26	54.5	54.0	53.0	60.5	63.2	67.0	65.0	60.5
27	59.0	58.0	56.0	65.2	. .	74.6	70.0	58.5
28	58.0	51.5	51.0	69.5	76,0	79.0	73.0	63.0
29	60.0	55.0	55.0	72.0	77.5	79.2	74.7	69.4
30	69.4	69.0	69.5	75.5	81.5	82.6	78.2	74.0
31	71.0	69.0	70.0	76.0	81.5	85.5	81.5	75.5
means.	57.56	55.17	54.43	64.85	71.69	74.11	69.20	62.06

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
June 1	67.5	64.0	64.5	77.5	82.5	87.5	81.0	69.5
2	65.0	68.5	66.0	70.0	78.3	82.5	73.5	69.2
3	64.2	60.0	58.0	61.6	69.8	75.0	69.4	65.0
4	58.0	55.0	54.5	64.0	69.5	75.0	69.8	65.0
5	63.0	61.0	60.0	69.5	76.0	80.0	71.6	67.0
6	67.0	65.0	61.5	72.5	81.0	80.5	73.5	64.5
7	63.5	59.0	54.0	64.5	70.5	63.6	60.0	55.0
8	52.0	49.5	51.5	61.0	66.5	64.0	67.3	58.5
9	55.0	54.0	54.8	67.3	77.0	82.5	80.0	71.0
10	62.0	57.6	56.5	72.0	83.0	84.2	79.0	68.0
11	64.5	65.0	67.0	73.0	75.0	72.8	76.5	71.5
12	68.0	67.0	68.0	78.0	82.0	82.5	75.0	67.0
13	62.0	61.0	61.5	70.0	79.0	80.5	69.5	65.0
14	62.0	61.0	60.5	64.5	69.0	74.2	75.0	64.5
15	63.0	60.0	60.0	74.5	88.0	92.5	91.0	79.5
16	73.5	73.0	69.5	74.0	79.5	84.5	80.0	68.0
17	62.5	60.0	61.5	76.0	90.3	96.8	93.5	83.5
18	77.0	75.0	76.0	86.2	93.5	85.4	69.0	68.0
19	67.0	67.0	66.5	69.0	75.8	79.0	70.0	66.4
20	60.8	60.0	59.5	62.0	64.5	64.2	63.2	62.5
21	63.0	63.2	63.5	67.0	72.0	73.5	73.5	66.4
22	63.5	63.0	60.4	67.0	72.3	75.3	73.5	66.5
23	62.0	60.0	59.0	69.7	74.0	75.4	74.0	64.0
24	60.4	59.0	58.5	66.0	72.5	73.0	70.0	64.0
25	60.4	56.5	57.5	69.5	74.0	68.7	67.0	63.5
26	62,3	62.0	63.5	66.0	68.2	70.0	69.0	64.8
27	63.8	62.0	63.0	66.3	68.5	71.5	69.4	68.0
28	66.5	64,0	64.0	71.0	71.5	71.5	72.2	69.5
29	67,5	67,0	66.5	70.6	72.7	76.0	74.0	69.5
30	69,4	68.0	70.2	73.5	75.5	78.4	75.5	71.0
Hourly means.	63.87	62.24	61.91	69.79	75.73	77.35	73.53	67.19

time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
63.	°	°	°	°	°	°	°	°
1	70.0	70.0	70.5	74.0	78.0	83.0	80.0	73.2
2	71.8	71.0	71.5	76.0	83.0	81.5	79.8	75.0
3	72.0	71.2	72.0	76.5	84.0	87.0	81.2	75.5
4	73.5	73.0	70.5	76.0	82.5	81.2	73.0	72.0
5	71.4	70.2	71.0	72.0	76.5	78.0	76.5	73.5
6	72.0	67.0	68.0	67.0	69.0	71.0	70.8	69.0
7	69.0	70.0	70.2	75.0	78.0	82.0	77.2	73.5
8	72.5	72.0	72.0	73.6	73.0	73.5	75.5	69.5
9	67.5	65.5	66.6	76.0	80.0	80.5	79.2	71.2
10	69.4	68.0	68.0	79.8	80.5	85.5	79.0	72.5
11	70.5	70.0	72.0	75.5	84.0	84.0	80.0	74.5
12	74.5	74.5	75.0	77.0	82.5	81.5	72.0	72.5
13	73.0	72.0	70.0	70.2	70.7	72.0	71.2	72.0
14	72.0	71.5	71.5	75.5	78.8	84.5	78.5	72.8
15	72.0	72.0	72.0	74.6	82.0	82.0	79.0	73.8
16	71.2	70.6	69.5	76.5	. .	77.6	78.0	69.5
17	66.5	65.5	65.0	67.2	67.5	67.0	64.0	63.8
18	60.5	60.0	60.5	67.6	74.5	78.2	76.6	68.2
19	65.0	64.0	63.5	74.2	79.6	84.6	81.0	73.0
20	68.5	67.0	66.8	79.0	85.0	84.0	81.4	75.6
21	74.0	73.0	72.5	76.5	81.0	84.6	78.5	71.0
22	65.5	63.5	60.2	72.0	77.5	82.5	79.0	67.8
23	65.5	64.0	63.0	76.0	81.0	82.5	75.6	73.0
24	72.0	71.0	70.5	74.0	82.2	87.0	84.5	76.5
25	72.2	72.0	72.0	80.0	86.5	85.0	82.0	75.5
26	70.5	69.0	69.0	79.5	85.6	87.5	85.2	76.0
27	74.0	73.0	72.0	80.5	81.4	77.8	75.5	73.0
28	72.0	71.5	71.5	76.0	84.5	83.5	79.0	72.5
29	70.2	70.0	69.0	72.5	75.5	78.0	72.5	70.2
30	70.2	69.0	72.0	76.2	81.8	80.0	77.0	74.5
31	73.6	73.0	73.5	76.8	82.4	83.0	81.5	74.0
means.	70.40	69.48	69.40	74.94	79.61	80.97	77.56	72.41

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
August 1	72.5	72.6	72.5	80.0	86.6	86.5	85.0	79.0
2	75.8	73.0	74.0	83.0	90.6	90.0	88.2	79.0
3	78.0	76.0	74.5	83.5	92.2	94.0	86.0	82.0
4	76.0	75.0	73.0	80.8	88.5	91.0	80.0	75.5
5	75.0	74.5	72.5	79.6	86.0	88.5	80.8	78.0
6	74.0	72.0	70.8	81.5	88.0	87.5	84.0	78.0
7	74.0	73.0	72.5	81.0	88.0	89.0	83.5	79.0
8	74.5	74.0	73.5	81.2	89.0	89.5	84.0	77.5
9	75.0	71.2	71.8	82.0	91.0	92.5	89.4	80.0
10	77.5	76.0	75.5	85.0	92.5	94.5	89.0	82.5
11	78.0	77.5	76.0	85.0	93.5	95.0	90.5	82.0
12	79.8	76.5	75.5	82.8	90.4	90.5	83.5	78.0
13	76.0	73.0	73.2	73.8	76.0	78.6	77.5	75.0
14	73.4	73.0	73.0	79.5	87.2	88.0	81.8	78.0
15	71.0	67.6	69.0	79.5	88.0	91.5	86.3	77.5
16	74.5	73.5	71.0	80.5	89.1	91.5	82.6	78.0
17	75.0	72.0	71.5	77.0	86.5	88.8	78.0	69.0
18	66.2	63.0	61.5	72.0	78.8	82.6	74.8	66.5
19	62.0	60.0	60.2	72.2	81.5	84.0	78.0	68.6
20	66.5	62.2	62.0	71.5	85.0	87.0	80.0	71.5
21	69.0	66.0	64.5	77.5	89.0	93.5	83.0	76.5
22	74.0	72.0	69.5	80.0	90.5	93.6	85.6	77.5
23	76.0	74.5	72.0	82.5	92.5	96.5	87.5	78.5
24	75.8	74.0	73.5	82.0	91.4	91.0	84.6	78.0
25	77.0	74.0	74.5	80.0	82.0	78.5	74.5	67.3
26	62.5	61.5	60.5	64.0	71.2	74.5	71.8	69.0
27	59.0	54.5	55.5	65.0	72.0	75.2	69.0	69.5
28	57.0	56.0	59.5	69.0	79.0	81.6	76.5	67.0
29	67.5	66.0	66.2	70.2	78.0	85.0	69.0	65.5
30	59.0	55.0	49.0	61.0	68.0	72.4	67.0	57.5
31	52.0	50.5	50.0	62.5	68.5	75.5	65.5	58.5
Hourly means.	71.08	69.02	68.33	76.94	84.85	87.64	80.54	74.17

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
September 1	56.0	55.0	55.5	69.5	76.5	75.0	70.6	61.5
2	58.5	58.0	61.0	63.5	73.4	81.2	71.6	62.0
3	56.5	55.0	54.0	65.5	78.0	80.5	73.0	66.0
4	64.0	62.0	61.5	63.5	73.0	79.0	71.0	60.5
5	56.5	52.0	50.5	65.0	80.0	80.0	73.0	64.5
6	61.0	60.8	60.5	71.0	79.0	85.0	71.0	67.8
7	65.5	63.5	62.0	73.2	82.0	85.2	78.2	75.0
8	68.5	68.8	68.5	73.0	82.5	83.5	78.0	73.0
9	70.5	68.0	66.0	74.0	82.0	75.0	69.0	65.0
10	65.0	61.8	61.0	66.5	70.0	72.0	70.0	65.5
11	62.8	61.5	61.5	64.5	72.8	77.0	71.0	66.0
12	64.0	62.0	61.8	71.5	82.5	84.0	70.2	67.4
13	67.8	65.5	64.5	68.0	76.5	81.0	74.8	69.5
14	69.4	68.5	68.2	70.0	77.5	78.5	73.5	70.5
15	69.5	68.5	68.0	73.0	83.0	82.5	75.5	70.5
16	69.0	68.5	68.0	72.0	76.5	80.6	75.5	72.4
17	71.5	70.5	70.5	73.8	81.5	82.5	76.0	75.0
18	73.5	73.0	72.2	75.0	69.2	72.4	70.0	63.2
19	61.5	58.0	56.0	57.7	58.6	59.5	57.0	53.5
20	53.0	52.0	50.0	54.0	58.6	60.5	55.2	48.2
21	46.4	42.5	41.6	57.8	69.0	73.0	62.5	56.0
22	57.5	57.0	52.0	55.0	63.5	65.0	53.5	57.2
23	44.6	42.5	41.0	55.0	65.0	68.6	58.5	52.4
24	48.0	45.8	45.0	56.5	69.5	73.2	64.0	57.5
25	55.2	52.0	51.0	59.0	64.0	68.0	58.0	50.5
26	49.0	47.2	44.0	51.0	60.0	63.0	55.0	47.0
27	43.0	42.0	39.5	52.5	62.0	67.0	56.8	47.8
28	44.0	40.8	39.5	52.3	68.5	73.5	61.5	54.0
29	47.0	44.0	42.0	55.0	70.0	74.5	62.0	55.0
30	52.0	49.5	49.0	55.6	71.0	73.5	64.0	57.0
Hourly means.	59.02	57.31	56.19	63.13	72.52	75.14	67.33	61.71

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
October 1	51.5	51.5	51.5	57.0	66.5	66.0	63.4	61.6
2	60.0	60.0	62.0	66.5	68.0	67.5	67.0	63.0
3	61.5	58.0	55.6	59.8	67.0	72.4	61.6	59.0
4	57.0	55.0	52.5	60.0	68.2	69.4	61.0	57.2
5	53.0	50.0	47.0	50.0	56.5	60.0	52.0	45.5
6	43.0	42.0	39.5	51.5	58.5	50.8	52.5	48.5
7	46.5	47.0	49.0	58.0	63.0	63.5	59.5	58.0
8	58.5	58.0	57.8	55.5	54.0	60.5	54.3	49.5
9	47.0	45.0	42.2	52.0	65.0	66.7	56.0	50.6
10	45.0	46.0	47.5	53.5	60.0	61.0	57.0	53.0
11	48.0	46.5	43.0	51.5	61.0	61.2	51.5	48.0
12	43.0	39.0	37.6	47.8	58.5	60.6	50.0	44.5
13	40.6	40.0	39.0	50.0	64.0	63.0	54.5	49.0
14	46.0	43.5	40.8	50.0	59.0	62.5	58.0	54.5
15	51.8	53.0	55.5	60.4	69.0	65.7	63.5	63.0
16	63.5	63.5	63.0	65.2	65.0	68.0	67.0	61.5
17	58.0	53.5	53.5	59.5	71.7	74.5	64.5	61.0
18	59.5	58.6	58.0	65.0	75.6	76.0	66.8	64.3
19	63.0	61.5	54.5	54.0	62.0	64.0	56.5	50.0
20	46.8	44.0	42.5	49.4	64.7	66.7	57.5	51.2
21	49.8	48.0	47.5	56.5	73.3	74.5	63.2	58.0
22	56.8	52.5	49.0	52.0	62.0	61.5	52.0	46.5
23	44.0	46.0	48.5	53.8	67.5	61.5	59.0	55.0
24	54.0	52.0	51.2	47.5	46.2	46.0	47.0	47.0
25	46.5	40.0	38.0	44.5	53.2	52.8	46.2	45.0
26	42.5	40.5	36.5	42.0	53.0	50.5	43.5	38.1
27	36.0	35.5	34.5	40.5	51.5	. .	42.0	39.1
28	35.5	33.8	31.5	41.6	53.0	55.0	43.6	39.8
29	35.2	33.0	32.0	41.0	57.5	58.5	47.5	43.6
30	39.0	38.5	42.0	47.0	62.8	64.2	58.0	55.0
31	55.5	56.5	56.8	58.1	59.7	62.1	52.0	44.5
Hourly means.	49.61	48.13	47.28	52.97	61.84	62.85	55.73	51.44

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
November 1	41.0	40.5	38.0	44.0	53.0	57.2	44.0	41.4
2	36.0	33.0	32.0	39.7	55.0	56.7	48.5	45.0
3	45.5	46.0	47.0	52.5	63.0	69.0	62.0	55.0
4	50.3	46.0	41.5	50.4	62.5	65.0	51.5	46.2
5	47.0	48.0	48.5	56.5	70.5	68.5	64.3	62.0
6	62.0	60.0	54.0	58.0	60.8	60.0	50.0	44.0
7	39.0	35.0	34.5	47.2	59.0	62.5	54.2	50.0
8	51.5	46.0	43.5	53.0	57.0	54.0	46.5	42.0
9	39.5	38.0	37.5	38.8	44.6	44.5	39.0	35.5
10	33.5	31.5	39.5	34.5	40.5	40.0	35.0	33.0
11	29.5	29.0	28.0	35.0	46.2	48.6	45.0	47.0
12	44.5	42.5	41.0	49.6	67.0	69.8	52.2	49.5
13	45.0	37.8	36.5	44.2	62.0	67.4	56.5	51.0
14	46.5	39.0	36.5	43.2	59.0	65.7	59.0	56.5
15	56.0	55.2	55.0	48.0	50.4	52.0	48.5	46.0
16	44.5	44.0	43.0	46.0	53.0	51.5	56.5	54.0
17	44.5	44.0	41.5	44.0	54.0	52.8	46.4	44.3
18	43.2	42.5	43.5	47.0	51.0	57.0	46.8	43.0
19	42.5	42.6	38.8	45.5	54.0	63.0	55.5	49.8
20	47.0	46.0	45.0	54.0	68.5	69.7	58.3	55.5
21	54.0	52.0	50.0	48.5	50.5	. .	48.5	48.5
22	48.7	47.0	46.0	46.3	52.0	54.4	47.0	38.6
23	35.8	35.0	34.8	39.5	50.0	47.8	46.0	44.7
24	44.0	44.0	43.5	44.3	46.7	48.5	48.3	49.0
25	49.7	48.5	48.0	43.6	49.0	47.5	44.5	40.5
26	36.5	34.5	33.5	37.0	47.3	48.0	38.0	35.0
27	32.5	31.5	29.5	34.5	48.5	45.0	41.5	29.0
28	37.8	40.0	44.0	46.0	47.4	48.0	48.2	50.0
29	50.2	46.0	45.2	43.0	42.5	43.5	37.0	35.4
30	32.5	31.0	29.5	29.3	30.6	27.0	24.0	21.0
Hourly means.	43.68	41.87	40.96	44.77	53.18	54.64	48.09	45.08

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
December 1	20.0	20.0	19.0	27.0	38.0	41.0	34.0	31.5
2	32.0	32.0	32.0	38.0	55.5	57.0	49.5	51.0
3	45.0	42.0	39.0	40.5	53.0	49.5	41.8	39.7
4	37.5	36.0	35.0	38.5	54.3	60.0	49.5	45.0
5	44.0	42.0	34.5	37.0	52.0	50.0	45.2	38.1
6	43.1	36.0	34.0	32.5	39.5	39.7	29.8	25.5
7	24.8	22.5	20.0	26.5	37.6	39.0	31.2	25.5
8	22.0	20.0	18.0	23.0	35.6	41.5	33.5	28.5
9	24.2	22.6	26.2	31.5	51.5	50.0	43.5	37.0
10	35.0	32.0	30.0	33.0	39.0	39.7	28.6	26.0
11	25.0	26.5	27.5	29.0	33.5	36.0	35.7	36.0
12	36.0	36.0	36.5	41.0	43.2	47.0	43.5	45.0
13	51.2	53.0	55.0	56.8	66.5	64.5	57.0	53.0
14	52.5	53.0	54.5	55.5	64.0	54.0	47.5	41.0
15	39.2	38.0	35.0	38.0	44.0	44.5	38.0	36.2
16	32.5	30.0	28.0	32.4	41.2	37.5	33.5	33.0
17	34.2	34.0	33.5	35.8	39.0	40.0	40.5	42.0
18	40.0	40.0	40.0	41.0	42.6	40.5	36.5	34.0
19	32.0	32.0	29.5	29.4	32.0	29.0	26.5	24.0
20	23.5	21.5	20.0	24.0	27.0	27.0	23.0	21.8
21	20.5	20.0	20.1	22.6	28.5	29.4	29.0	29.5
22	29.5	29.5	29.0	29.8	31.5	31.5	28.6	28.8
23	28.0	27.5	26.0	22.5	24.6	24.0	22.5	20.8
24	20.7	19.5	19.0	22.7	23.2	35.0	26.5	25.0
25	22.0	18.7	17.8	21.0	30.0	29.5	27.4	25.0
26	22.1	18.5	16.5	20.0	34.8	35.0	31.0	30.0
27	31.0	32.0	34.0	35.6	35.3	36.8	36.0	36.5
28	34.5	35.5	36.0	37.0	. .	42.0	39.0	37.0
29	37.0	36.8	35.0	33.6	36.5	42.0	39.5	34.2
30	34.8	34.0	35.5	34.5	49.5	54.5	45.5	34.6
31	34.7	34.4	35.0	39.0	39.3	40.5	42.0	43.0
Hourly means.	32.53	31.47	30.68	33.18	40.73	41.54	36.63	34.14

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
January 1	33.0	32.0	27.0	28.0	33.0	36.0	32.0	28.0
2	27.0	24.5	23.0	25.0	38.0	39.5	35.2	29.0
3	26.0	24.0	22.0	26.0	38.5	43.5	39.5	34.5
4	32.0	32.0	32.5	40.5	49.4	52.0	49.0	42.0
5	38.3	39.0	33.5	35.5	43.5	47.5	40.7	38.0
6	35.5	35.5	31.4	34.0	43.5	44.8	40.0	35.5
7	32.0	31.0	27.2	28.5	29.0	27.5	25.4	22.0
8	21.0	20.0	20.0	22.0	24.5	25.3	24.7	25.5
9	24.0	24.2	25.4	27.5	32.0	35.5	30.0	30.7
10	24.0	27.0	30.5	34.5	37.5	38.4	36.5	36.8
11	34.3	32.2	31.0	34.0	36.0	39.8	37.8	36.5
12	33.0	30.0	29.2	32.6	36.2	39.0	33.5	32.0
13	31.0	30.2	30.6	33.5	36.0	36.8	35.0	33.5
14	36.0	37.0	36.5	37.0	40.0	43.5	47.2	52.0
15	53.0	53.5	52.5	53.0	54.5	54.4	52.5	55.0
16	55.5	56.0	56.0	48.5	39.8	34.5	28.8	25.0
17	24.3	21.0	20.6	22.0	26.0	24.5	21.5	19.4
18	18.0	15.0	14.2	20.5	26.5	29.0	24.2	19.0
19	18.4	16.0	16.0	22.2	31.5	32.7	29.0	27.3
20	25.0	24.4	25.5	29.4	32.0	32.5	33.0	33.0
21	33.5	36.2	36.4	37.0	40.0	39.8	39.2	37.9
22	37.6	37.5	37.5	37.8	40.3	41.0	39.6	37.6
23	37.5	36.8	36.5	37.6	41.0	47.5	44.5	40.3
24	40.0	37.0	35.5	38.2	42.8	43.5	42.2	42.0
25	41.6	41.0	41.0	41.6	45.8	46.5	45.8	43.6
26	38.6	38.8	39.0	41.2	50.0	51.6	50.0	50.0
27	50.0	52.0	53.0	52.6	47.5	42.0	41.4	39.0
28	38.0	34.5	33.0	33.3	33.4	32.0	31.0	30.5
29	32.0	32.4	31.0	29.5	30.5	32.6	32.0	30.0
30	28.0	24.2	23.0	27.0	32.5	35.0	31.4	29.8
31	28.7	32.0	31.5	32.0	36.6	37.5	34.5	33.4
Hourly means.	33.12	32.80	31.68	33.29	37.67	38.89	36.36	34.48

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
February 1	32.0	31.0	30.3	33.2	41.7	45.5	43.2	44.5
2	45.8	41.0	37.0	32.3	30.5	30.2	28.0	27.0
3	26.0	24.5	23.6	21.0	23.0	21.0	16.4	12.5
4	10.5	9.0	8.0	10.5	19.5	18.6	16.0	15.0
5	15.0	15.0	14.5	16.0	21.0	28.4	36.6	40.0
6	45.0	45.0	41.4	37.8	36.5	36.0	29.5	29.5
7	26.0	24.8	24.0	27.5	32.5	34.0	31.5	30.0
8	28.5	28.0	27.0	30.5	39.0	41.5	38.8	36.5
9	34.6	33.0	32.5	36.5	45.5	46.6	42.5	41.0
10	37.5	36.3	35.5	40.5	49.6	44.0	34.6	34.0
11	31.8	31.0	30.5	32.0	33.0	33.4	31.9	32.0
12	32.7	33.0	34.2	36.0	42.6	51.5	51.0	40.0
13	35.5	33.0	30.5	31.8	36.8	38.0	34.8	30.5
14	28.4	28.5	27.0	29.5	34.3	35.4	33.0	33.5
15	35.5	37.0	39.5	41.8	46.4	51.8	46.5	35.5
16	33.0	35.0	29.3	34.2	38.2	40.0	37.2	33.0
17	32.5	32.5	32.5	31.3	31.4	32.5	30.0	29.6
18	29.3	27.0	28.6	30.0	32.0	33.5	33.6	35.3
19	36.0	37.0	38.0	37.5	39.6	41.4	39.4	39.0
20	40.5	43.2	42.0	44.5	44.0	41.0	38.8	36.0
21	34.0	33.0	32.0	34.6	34.6	34.0	31.5	25.8
22	25.0	20.6	18.2	18.5	18.0	19.5	18.5	20.2
23	17.0	16.0	16.8	21.0	27.5	31.5	27.6	20.6
24	14.5	15.5	16.5	20.5	30.0	32.5	32.0	26.5
25	23.5	19.0	18.0	25.0	33.4	39.5	36.8	34.0
26	31.6	33.0	36.0	37.6	38.8	39.5	41.0	39.0
27	41.0	43.5	47.5	51.0	53.0	48.5	45.5	40.5
28	38.5	34.5	34.5	36.5	38.3	38.0	38.0	37.6
Hourly means.	30.76	29.99	29.44	31.39	35.38	35.97	34.44	32.09

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
March 1	36.8	36.5	36.0	37.0	41.5	46.0	41.5	38.5
2	36.5	33.4	31.4	35.8	44.0	44.5	42.0	39.2
3	37.0	36.5	36.0	40.0	42.0	35.0	36.0	35.0
4	31.0	29.5	27.5	30.5	30.0	28.6	27.0	26.0
5	24.0	19.2	18.0	22.5	27.5	32.5	30.8	26.5
6	27.5	29.0	31.5	32.2	39.0	42.5	41.5	39.5
7	39.5	39.5	39.5	40.8	48.0	53.0	50.5	46.5
8	38.0	38.0	34.0	35.0	37.5	45.0	44.5	41.5
9	39.5	38.5	38.0	40.0	41.4	42.5	39.0	35.0
10	38.0	37.5	34.0	33.5	32.0	32.0	31.8	31.3
11	31.8	30.8	30.5	31.7	39.4	40.0	37.5	35.4
12	31.2	29.0	27.5	29.5	29.8	30.0	29.0	28.0
13	23.0	22.5	21.5	25.0	27.0	26.0	26.5	22.0
14	20.5	19.5	20.5	29.0	33.0	34.0	32.0	30.0
15	29.5	29.0	29.0	29.0	30.0	29.0	27.0	25.0
16	24.8	24.6	24.0	24.6	27.5	28.6	29.0	24.8
17	22.8	21.5	21.0	30.0	38.4	44.0	43.0	40.8
18	38.5	39.0	37.0	41.5	40.3	40.6	39.5	32.0
19	29.5	25.0	23.5	25.0	29.6	33.5	31.5	26.5
20	28.0	28.8	29.5	29.0	28.0	30.0	31.0	30.0
21	28.5	25.5	25.0	28.0	32.5	35.2	35.5	34.5
22	34.4	35.5	35.7	37.5	46.3	52.5	51.0	45.0
23	40.0	38.5	38.5	42.0	49.0	47.5	44.5	41.0
24	41.0	39.4	41.0	42.2	48.4	52.6	51.4	50.0
25	51.8	52.0	54.0	60.0	57.5	51.5	47.0	42.0
26	39.8	37.0	38.0	35.0	35.0	35.5	37.5	34.0
27	31.0	30.0	30.0	35.0	37.5	41.4	40.0	37.0
28	35.5	37.0	38.0	37.8	39.0	44.2	44.6	42.0
29	38.5	35.0	32.6	31.4	31.5	31.2	28.0	26.5
30	26.0	26.0	27.0	32.0	39.6	43.0	40.0	36.7
31	36.5	34.0	32.0	33.4	35.2	36.0	37.0	35.5
Hourly means.	33.24	32.17	31.67	37.29	37.34	38.96	37.65	34.76

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
April 1	36.0	35.0	27.0	28.0	30.5	32.5	33.5	32.0
2	31.5	32.6	34.5	40.0	50.2	54.4	52.0	41.5
3	40.0	40.0	34.8	40.0	44.0	42.5	40.4	36.5
4	30.0	26.5	26.0	29.5	34.0	33.0	32.5	31.0
5	30.8	30.2	31.8	32.0	33.0	34.4	36.0	35.0
6	34.6	32.5	31.0	35.8	39.0	41.0	42.5	37.0
7	38.6	37.4	35.0	35.5	36.0	38.5	37.3	36.0
8	34.0	33.0	32.0	33.0	38.0	37.5	36.5	34.0
9	34.0	34.2	32.8	36.0	41.5	44.0	41.6	38.5
10	35.0	32.5	32.0	45.0	50.5	52.0	50.4	46.0
11	44.5	43.0	42.4	50.2	57.0	57.5	56.0	52.0
12	49.0	48.0	46.0	54.0	58.7	58.0	56.8	50.0
13	52.0	48.0	43.0	41.8	43.5	43.5	43.2	40.0
14	38.0	33.0	32.0	45.4	49.0	49.5	47.0	44.0
15	44.0	41.0	41.5	43.0	45.7	47.0	49.0	48.8
16	49.8	48.0	46.0	48.4	49.0	49.2	48.5	47.5
17	46.0	46.0	45.0	48.0	50.0	50.0	50.5	49.0
18	47.0	46.0	46.5	50.0	52.0	53.0	52.8	49.0
19	54.0	49.0	44.5	54.3	58.0	60.5	55.6	53.0
20	50.5	50.0	49.0	51.5	54.6	53.2	49.0	46.5
21	43.0	42.0	40.5	40.2	44.6	45.6	44.0	42.0
22	39.0	35.0	35.5	41.5	47.5	50.8	48.6	48.0
23	47.0	46.0	46.5	45.5	47.0	49.8	51.8	50.0
24	47.5	46.5	45.5	47.5	52.5	49.6	51.5	50.5
25	48.5	44.0	45.5	43.4	44.5	47.0	45.0	41.5
26	38.0	33.5	34.0	39.0	44.5	47.0	48.0	44.5
27	42.6	38.0	37.8	50.6	53.3	52.2	53.0	50.0
28	45.6	44.5	45.5	55.0	55.0	55.3	55.0	53.0
29	54.0	53.0	53.0	55.4	61.5	60.5	59.4	56.0
30	53.5	52.5	51.6	55.0	57.0	58.0	55.0	53.6
Hourly means.	42.60	40.69	39.64	43.82	47.45	48.23	47.41	44.55

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
May 1	49.0	46.5	45.6	46.5	58 0	60.3	59.5	54.5
2	54.5	52.5	52.0	59.7	63.5	63.5	61.0	57.5
3	55.5	53.0	53.0	61.6	64.5	62.5	61.0	57.0
4	59.0	58.0	57.4	61.2	63.0	65.5	65.3	60.0
5	58.0	57.5	58.0	62.0	65.2	62.0	53.8	49.0
6	46.0	46.0	43.0	44.0	45.5	45.5	43.8	43.0
7	42.5	42.5	42.2	43.0	45.5	46.6	46.4	46.0
8	45.5	45.0	44.2	45.4	46.0	48.0	45.6	45.6
9	45.6	46.5	45.8	52.5	56.8	58.4	57.0	52.6
10	50.5	50.0	48.0	59.8	64.5	66.0	63.6	59.0
11	55.0	54.5	51.5	62.2	70.5	70.5	67.6	63.0
12	60.5	59.0	58.0	67.5	72.0	72.0	68.5	65.5
13	63.0	61.0	59.8	68.0	69.0	67.5	64.0	63.0
14	62.2	61.0	60.0	61.5	66.8	68.0	56.8	50.0
15	45.5	46.0	46.8	49.5	54.2	55.5	55.5	52.0
16	50.0	49.0	49.5	59.0	61.0	61.5	59.0	56.5
17	57.5	57.0	56.8	64.5	65.5	63.0	56.0	51.0
18	50.0	48.0	45.5	51.6	51.6	54.0	50.6	48.0
19	47.0	44.6	44.5	50.6	55.5	59.0	59.0	54.5
20	51.8	49.0	49.5	59.7	64.5	67.0	65.5	59.5
21	57.0	54.8	53.2	62.5	67.5	70.5	68.0	61.5
22	59.0	58.0	57.0	66.0	69.2	71.0	70.6	65.0
23	61.0	59.8	59.0	67.5	74.0	72.0	73.0	66.0
24	64.0	60.0	62.0	67.0	72.5	77.0	71.5	64.5
25	57.0	55.0	53.6	52.5	52.6	56.0	55.0	53.0
26	51.5	51.0	51.0	56.4	58.4	61.0	60.0	56.5
27	56.0	55.4	54.8	59.0	. .	62.5	60.4	55.0
28	55.0	51.0	50.4	62.0	64.5	64.0	64.6	57.5
29	56.0	53.0	52.8	64.0	66.3	70.2	69.0	67.5
30	67.5	67.0	68.0	71.2	73.0	72.0	70.0	68.5
31	66.5	67.0	67.8	69.2	70.6	70.6	67.0	64.5
Hourly means.	54.81	53.50	52.94	58.94	61.72	63.33	60.92	56.99

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
June 1	62.5	60.5	61.5	64.5	66.0	70.0	69.0	62.0
2	59.0	61.0	58.0	62.0	67.4	70.2	67.4	61.0
3	59.0	58.0	57.0	58.3	61.7	64.5	65.0	58.0
4	54.0	52.0	53.0	57.5	57.5	62.0	59.0	61.0
5	58.6	58.4	58.2	62.5	66.3	68.0	63.0	60.0
6	60.0	60.0	58.0	64.6	66.0	64.0	66.0	61.3
7	57.0	53.0	50.6	56.0	55.5	53.0	50.6	47.5
8	47.5	46.0	46.7	51.5	54.0	54.0	55.6	52.4
9	51.0	49.5	50.5	57.0	62.0	69.0	68.0	62.0
10	58.0	54.0	53.5	62.5	70.6	72.4	71.0	64.0
11	62.0	62.0	63.0	67.0	69.0	68.6	71.4	69.6
12	67.0	66.0	67.0	72.0	73.0	74.0	69.8	64.0
13	60.5	60.0	59.0	65.5	72.0	74.5	67.6	62.0
14	60.8	60.0	59.5	62.0	65.2	70.0	71.0	61.2
15	61.0	59.0	59.6	70.0	72.5	72.5	74.6	70.6
16	68.5	68.0	62.0	63.5	65.2	71.0	70.5	63.0
17	60.0	58.0	60.0	70.4	76.0	84.0	82.6	76.5
18	74.0	71.0	73.0	78.0	80.0	75.0	68.0	67.5
19	66.0	66.0	66.0	67.5	71.0	73.5	66.5	64.5
20	60.3	59.5	59.2	61.0	63.0	62.5	62.0	61.5
21	62.0	61.5	63.0	66.4	69.5	68.5	66.5	66.0
22	63.0	62.0	60.2	60.5	61.8	62.8	65.0	61.0
23	60.0	59.0	59.0	61.5	63.0	64.0	64.0	62.0
24	60.0	58.0	58.0	62.5	64.5	65.0	66.7	63.0
25	59.5	56.0	57.0	66.5	70.0	66.5	65.6	63.0
26	62.2	61.8	63.5	65.5	67.5	68.5	68.8	64.3
27	63.5	61.5	62.5	65.4	67.2	69.5	67.6	67.0
28	66.0	64.0	64.0	68.0	68.5	69.0	68.0	68.0
29	67.0	66.0	66.0	70.2	72.5	73.5	71.5	68.5
30	69.0	67.6	70.0	72.3	74.0	75.4	74.0	70.7
Hourly means.	61.29	59.98	59.95	65.07	66.75	68.51	67.22	60.10

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
July 1	69.5	69.5	69.5	73.7	75.5	78.5	75.3	72.2
2	71.5	70.5	71.0	73.8	78.5	75.5	74.5	70.0
3	70.5	71.0	71.5	75.4	80.5	80.5	78.5	73.5
4	71.0	71.5	71.0	75.2	78.4	76.6	71.5	71.6
5	70.8	69.5	70.0	71.6	74.2	76.0	75.0	72.8
6	71.5	66.8	67.5	67.0	68.0	70.0	70.5	69.2
7	69.2	70.0	70.0	74.0	75.0	78.0	75.2	73.0
8	72.0	72.0	72.0	73.0	73.0	71.5	72.0	69.2
9	67.0	65.0	66.0	72.0	73.5	74.5	73.4	70.0
10	68.0	67.2	67.2	74.6	75.0	80.0	76.0	72.2
11	70.5	69.5	72.0	74.5	79.5	79.4	78.0	74.5
12	74.0	74.5	75.0	76.2	79.0	77.0	70.0	72.4
13	73.0	71.5	70.0	70.5	71.0	71.4	71.0	72.0
14	72.0	71.3	71.4	74.0	76.2	80.0	76.5	72.5
15	72.0	71.8	71.5	71.8	74.0	76.0	74.6	72.8
16	71.0	70.3	69.2	71.3	. .	72.5	73.4	69.4
17	66.2	65.2	65.0	66.0	65.7	66.0	63.2	62.5
18	60.0	59.4	59.8	65.0	69.5	71.5	70.5	67.0
19	64.5	63.5	63.0	71.3	74.8	76.0	74.8	70.5
20	67.8	66.8	66.5	75.4	79.5	76.5	75.6	73.5
21	72.5	71.0	69.5	70.5	72.0	73.5	71.2	67.0
22	62.5	62.8	58.5	65.0	67.0	71.0	69.5	65.2
23	64.0	63.0	62.5	71.0	72.8	72.8	70.6	68.0
24	69.5	68.5	70.0	73.0	76.5	80.0	79.0	74.5
25	71.5	71.0	71.8	77.4	80.0	78.5	78.0	72.0
26	70.0	68.5	69.0	75.6	79.0	80.5	80.2	74.0
27	72.5	72.0	71.5	78.0	79.6	73.2	73.8	72.5
28	71.6	71.0	71.4	73.5	78.0	77.8	75.4	72.0
29	69.8	69.0	68.8	71.6	74.0	75.0	70.5	69.8
30	69.6	69.0	72.0	74.5	77.0	75.0	73.0	72.5
31	72.5	72.5	72.5	75.0	79.0	78.5	76.6	72.3
Hourly means.	69.61	68.87	68.92	72.63	75.19	75.59	73.78	70.99

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
August 1	72.0	71.5	72.0	77.0	81.5	79.0	82.0	77.8
2	75.0	72.5	72.5	80.5	82.0	80.0	79.0	76.0
3	76.5	75.5	74.0	78.5	82.5	84.2	62.0	78.0
4	73.0	72.0	71.0	76.2	82.5	83.5	75.6	73.5
5	74.0	73.6	72.0	75.6	79.0	80.0	76.0	75.5
6	72.4	71.0	70.0	75.0	79.0	77.0	78.5	76.0
7	73.5	72.5	71.5	74.0	78.5	80.5	79.5	77.5
8	73.5	73.0	73.0	79.4	77.0	78.5	78.6	72.0
9	72.0	71.0	71.2	77.5	78.8	80.2	82.2	77.5
10	76.0	75.0	74.2	76.4	80.0	80.5	81.0	77.0
11	76.0	76.0	75.0	78.5	80.6	83.5	82.5	80.0
12	78.0	75.0	74.0	74.6	79.5	79.5	77.0	73.5
13	71.0	72.0	72.4	72.5	73.8	76.2	76.0	74.3
14	73.0	72.0	72.5	74.8	80.5	81.2	79.0	74.5
15	69.0	67.0	68.0	75.4	76.8	78.5	78.0	75.4
16	73.5	72.0	70.5	76.5	79.4	81.3	78.5	74.5
17	71.5	70.0	69.0	72.6	77.6	76.2	70.5	66.0
18	64.0	62.0	60.5	64.3	69.5	70.4	67.5	63.5
19	61.0	60.0	60.0	66.0	72.0	74.0	71.5	66.2
20	63.5	61.7	61.5	67.8	76.0	77.0	75.0	70.0
21	69.5	65.0	64.0	73.5	86.0	91.0	79.5	76.6
22	74.0	71.0	69.0	73.0	75.0	77.0	78.6	73.5
23	73.8	73.0	71.0	74.6	76.5	78.5	79.0	75.8
24	74.0	73.0	72.5	76.5	78.0	76.0	75.6	73.5
25	73.0	72.0	71.0	73.5	75.5	74.3	72.6	67.0
26	61.5	59.0	57.5	57.0	63.5	66.0	65.2	64.0
27	58.0	53.6	53.0	59.5	65.6	68.0	65.0	58.0
28	56.0	55.0	58.5	65.8	73.5	75.5	72.5	66.0
29	66.0	64.5	65.4	68.5	74.2	78.8	65.0	61.0
30	55.4	54.0	48.5	56.5	61.5	65.5	61.5	56.5
31	52.0	49.8	49.0	58.5	63.2	64.8	60.2	56.5
Hourly means.	69.41	67.91	67.24	71.93	75.77	77.31	74.34	71.19

n time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
mber 1	55.0	54.0	54.5	64.0	68.0	69.8	67.0	60.5
2	57.0	57.5	60.0	61.5	68.2	73.5	68.0	61.5
3	56.0	54.5	53.5	63.5	72.0	74.5	70.0	64.6
4	63.5	60.8	59.5	60.8	67.0	71.5	67.0	59.0
5	55.2	51.0	50.0	61.4	73.0	74.0	70.5	63.5
6	60.3	60.0	60.0	67.0	75.2	79.5	70.8	67.4
7	65.0	62.0	61.5	70.0	75.5	80.0	75.8	74.0
8	68.0	68.0	68.0	70.0	74.5	79.0	76.0	72.0
9	69.8	66.0	65.5	70.0	74.0	71.4	67.0	64.5
10	61.0	60.0	58.7	63.6	66.0	68.5	67.0	63.5
11	61.0	60.0	60.0	61.5	68.0	72.0	68.5	65.0
12	62.5	61.5	61.4	68.5	77.5	79.5	69.8	66.8
13	67.4	64.5	64.0	67.5	71.5	76.8	73.5	69.0
14	68.7	68.0	68.0	69.5	73.8	74.2	72.0	69.2
15	69.0	68.0	67.5	70.5	78.0	77.5	73.5	70.0
16	68.7	68.0	67.8	70.6	75.0	77.5	74.5	71.5
17	71.0	70.0	70.0	71.5	77.2	79.5	74.0	74.0
18	73.0	72.8	72.0	74.4	68.6	68.5	67.0	61.0
19	59.7	56.0	55.0	55.2	58.0	57.2	55.0	52.0
20	52.0	51.0	49.0	51.8	54.8	56.5	52.5	47.5
21	45.5	41.5	41.0	54.0	64.0	68.0	61.0	54.0
22	47.0	56.0	50.0	51.2	59.3	60.5	52.0	55.5
23	44.2	41.5	40.8	53.0	61.2	64.5	57.2	51.8
24	47.5	46.0	44.8	54.0	66.5	69.6	63.2	57.2
25	55.0	51.0	50.8	58.0	61.4	63.0	55.5	48.5
26	47.5	45.8	43.0	48.5	56.0	59.0	53.0	46.8
27	43.0	40.5	39.0	49.0	57.5	64.8	55.6	47.0
28	44.0	41.0	.	49.8	63.0	60.2	56.0	51.5
29	46.8	43.0	42.0	52.4	62.0	63.5	59.0	54.0
30	51.5	49.2	49.0	55.5	63.0	64.5	60.0	56.0
rly means.	57.86	56.30	56.07	61.27	64.32	69.95	65.06	60.63

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
October 1	51.0	51.0	51.0	56.8	62.0	62.4	60.2	59.5
2	59.0	59.4	62.0	65.5	66.8	67.0	66.8	62.0
3	56.2	55.0	51.8	52.4	58.6	64.0	58.5	56.0
4	56.5	54.6	52.5	56.5	58.6	59.0	53.8	51.0
5	47.5	44.0	42.3	42.4	47.0	50.0	45.5	42.5
6	41.8	41.0	39.0	45.5	50.6	50.6	49.3	47.0
7	45.5	46.0	48.0	55.0	58.0	58.0	52.0	52.0
8	58.0	58.0	57.5	54.2	52.5	53.5	51.4	46.4
9	44.5	44.0	41.5	48.7	56.8	57.3	53.5	49.5
10	42.0	45.5	47.0	51.8	56.0	55.5	52.0	51.0
11	47.0	42.0	41.5	48.0	52.0	53.0	48.0	46.0
12	42.0	38.0	37.4	43.5	50.5	51.0	47.0	43.7
13	40.2	39.5	38.5	47.5	56.5	56.5	51.0	47.8
14	45.5	43.2	40.5	48.5	54.5	56.8	53.5	53.0
15	51.0	52.0	54.5	59.0	65.5	65.0	63.0	62.5
16	62.5	62.0	62.5	65.0	64.5	67.2	66.0	61.2
17	57.0	53.0	52.0	57.0	66.0	67.6	62.5	60.0
18	59.0	58.0	57.5	62.5	68.0	68.4	64.5	62.5
19	61.5	60.0	52.0	52.0	57.0	57.0	53.0	49.0
20	46.5	43.8	42.5	48.0	57.0	58.5	53.8	50.5
21	48.0	47.0	47.0	54.5	63.0	62.3	57.0	52.0
22	51.7	49.0	44.5	46.5	53.5	53.6	48.0	45.3
23	43.5	44.0	46.5	51.0	59.2	57.0	57.5	53.5
24	53.5	51.6	50.1	46.5	45.5	45.5	45.7	45.5
25	43.6	38.0	36.0	40.7	47.5	47.0	43.0	42.0
26	40.0	38.0	34.8	38.0	46.8	43.5	38.6	35.2
27	33.5	32.5	31.5	36.0	43.8	. .	37.5	35.3
28	33.8	32.0	30.7	37.3	44.2	47.0	40.0	37.5
29	34.7	32.5	32.0	39.0	50.4	50.0	44.0	42.0
30	38.5	38.0	41.8	46.0	58.0	58.0	54.5	54.0
31	56.5	56.0	56.0	58.0	56.3	53.0	45.6	40.0
Hourly means.	48.11	46.73	45.88	50.11	55.69	56.51	52.15	49.53

n time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
mber 1	38.0	38.0	35.6	38.0	46.0	48.0	42.3	38.3
2	35.6	33.0	31.6	38.5	49.2	50.7	46.3	43.5
3	44.5	45.0	45.0	49.5	56.5	61.0	49.5	48.0
4	46.0	44.0	40.0	46.0	49.8	60.3	48.0	43.0
5	43.0	44.0	45.4	52.3	61.8	61.0	59.7	59.0
6	61.0	59.0	50.0	49.0	48.0	. .	43.5	40.0
7	37.0	34.0	34.0	41.5	49.4	50.0	46.3	44.2
8	44.2	42.0	40.5	46.5	48.0	44.5	41.5	39.0
9	36.8	36.0	35.0	35.0	39.0	36.8	36.2	35.0
10	33.0	29.0	27.8	31.5	34.0	33.7	30.5	29.7
11	27.5	27.0	26.0	31.8	39.5	40.5	39.5	40.0
12	38.5	37.0	36.5	43.0	53.4	56.0	46.0	42.5
13	40.0	35.0	35.2	40.8	52.0	54.0	48.0	45.0
14	43.0	38.0	36.0	41.5	51.3	57.8	56.5	56.0
15	55.5	55.0	54.8	47.5	45.6	46.0	45.0	43.8
16	43.5	42.5	41.5	43.4	48.2	47.5	. .	52.0
17	43.0	43.0	40.2	41.5	47.0	46.0	42.3	41.0
18	40.0	. .	40.0	41.5	47.5	48.5	43.0	41.0
19	41.0	41.0	38.0	43.5	49.5	54.6	50.4	46.7
20	45.0	44.0	43.0	49.8	59.2	59.5	53.8	50.5
21	50.0	50.0	48.0	47.5	49.5	. .	48.0	48.2
22	48.0	42.0	41.5	41.2	45.0	45.0	40.0	37.0
23	33.0	32.2	32.0	35.0	43.0	42.2	41.0	42.0
24	43.5	43.0	43.0	44.1	46.3	47.8	48.0	48.5
25	49.4	48.0	47.8	37.8	41.5	40.5	38.0	35.0
26	35.2	31.5	29.5	32.6	39.7	39.5	34.6	32.5
27	31.0	30.8	29.2	33.0	43.0	41.0	39.5	37.8
28	37.0	38.0	43.0	45.5	47.3	47.8	48.0	49.5
29	49.5	41.2	40.8	27.6	36.5	36.5	32.5	31.5
30	29.0	28.0	26.5	26.5	28.5	24.0	23.0	19.0
rly means.	41.29	39.69	38.58	40.76	46.51	47.17	43.48	41.97

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
December 1	18.5	18.2	18.0	24.0	31.5	33.2	32.5	29.5
2	29.5	29.5	29.5	32.5	44.5	46.0	40.5	40.5
3	38.5	38.0	35.0	37.0	45.5	43.6	39.5	37.0
4	36.0	35.0	34.5	37.3	47.2	50.0	43.5	41.0
5	39.5	38.6	33.2	36.0	45.0	43.8	40.0	36.0
6	38.0	33.0	30.5	29.0	34.2	32.2	. .	24.0
7	22.6	20.0	19.0	23.5	32.0	32.2	30.0	24.5
8	21.5	19.5	17.5	21.5	32.5	37.3	31.5	27.5
9	24.0	22.0	26.0	29.6	44.0	44.5	39.6	36.0
10	32.0	30.0	28.5	29.5	32.0	32.3	25.2	22.5
11	21.5	24.0	24.5	26.0	29.3	32.3	32.4	33.0
12	34.0	34.0	34.0	38.5	42.4	45.2	43.0	44.5
13	49.5	52.5	54.6	56.2	59.5	58.0	54.0	51.0
14	51.5	52.0	54.0	55.0	53.5	49.5	41.0	36.5
15	34.5	35.0	32.0	34.5	37.2	38.0	34.0	32.0
16	31.0	29.5	26.0	29.1	32.6	32.5	31.5	30.0
17	31.0	32.0	32.5	35.0	38.2	39.5	40.1	41.8
18	39.8	39.0	39.0	38.0	38.0	36.0	34.0	30.0
19	28.0	28.0	26.0	26.5	27.0	26.0	23.4	21.5
20	21.0	19.0	18.5	21.3	20.0	23.2	20.5	19.0
21	19.0	19.0	18.6	20.6	24.6	25.5	26.0	26.5
22	27.0	28.0	28.0	27.0	29.5	29.0	28.0	28.5
23	26.5	25.0	24.0	21.0	22.0	21.6	19.8	19.0
24	19.0	18.0	18.0	20.4	28.0	30.0	26.0	23.5
25	21.0	18.0	17.0	20.5	28.5	28.5	25.0	24.0
26	21.0	17.0	15.0	18.0	32.0	33.0	30.5	28.6
27	29.5	30.0	32.0	33.0	35.0	36.4	35.5	36.0
28	34.5	35.0	35.5	37.0	. .	42.0	38.5	36.5
29	36.7	36.0	34.8	33.5	36.0	40.5	38.8	34.0
30	34.2	33.5	34.0	33.5	44.0	46.2	41.6	33.6
31	34.5	33.0	34.0	37.0	38.6	40.0	41.8	42.9
Hourly means.	30.48	29.72	29.14	31.01	36.14	37.03	34.26	31.93

Mean time.		9h.	Noon.	3h.
1863.		°	°	°
January	1	84.0	77.5	79.5
	2	74.0	84.0	85.0
	3	. .	85.5	85.5
	4	83.4	92.0	75.0
	5	62.0	78.0	94.0
	6	. .	. .	. .
	7	. .	83.0	76.0
	8	. .	. .	62.5
	9	. .	79.4	78.0
	10	. .	. .	. .
	11	69.8	. .	. .
	12	76.0	79.5	80.0
	13	. .	. .	. .
	14	.	.	. .
	15	. .	. .	. .
	16	. .	76.4	. .
	17	52.0	69.0	72.0
	18	64.0	70.0	71.5
	19	. .	. .	83.4
	20	. .	. .	. .
	21	. .	. .	. .
	22	. .	. .	. .
	23	. .	. .	90.0
	24	82.5	85.2	. .
	25	. .	. .	93.0
	26	. .	86.5	. .
	27	. .	. .	. .
	28	. .	.	. .
	29	. .	. .	78.0
	30	. .	.	. .
	31	74.0	88.0	96.0
Hourly means.		. .	. .	. .

Mean time.		9h.	Noon.	3h.
1863.		°	°	°
February	1	. .	84.0	94.0
	2	74.5	82.0	87.0
	3	.	74.0	73.4
	4	64.0	67.0	70.0
	5	. .	. .	. .
	6	. .	. .	. .
	7	63.0	79.0	86.5
	8	52.5	86.0	91.0
	9	52.0	92.0	105.0
	10	74.0	99.0	99.0
	11	. .	. .	. .
	12	42.0	61.0	74.5
	13	71.5	98.0	100.0
	14	64.0	81.5	85.0
	15	48.0	57.0	81.0
	16	57.0	102.0	101.0
	17	. .	. .	. .
	18	. .	. .	. .
	19	. .	. .	. .
	20	57.0	92.0	97.5
	21	71.0	90.0	91.0
	22	. .	. .	. .
	23	63.0	83.0	86.0
	24	42.0	91.5	102.0
	25	39.5	91.0	88.0
	26	42.3	47.5	49.0
	27	59.0	95.5	95.5
	28	47.5	66.5	64.0
Hourly means.		. .	. .	. .

Mean time.		9h.	Noon.	3h.	6h.
1863.		°	°	°	°
March	1	42.0	53.0	100.0	89.0
	2	57.0	94.0	98.0	89.0
	3	78.0	98.0	67.0	63.0
	4	72.5	79.0	94.5	84.5
	5	64.0	81.0	85.0	76.0
	6	49.0	82.0	89.0	57.0
	7	42.0	65.5	75.0	61.5
	8	40.0	50.0	85.0	81.0
	9	76.0	93.0	97.0	90.0
	10	39.5	40.0	39.5	40.0
	11	63.0	86.0	92.5	79.0
	12	73.0	85.5	84.0	66.0
	13	69.0	68.0	67.5	67.5
	14	59.0	86.0	89.0	68.0
	15	61.0	79.0	48.5	33.0
	16	31.0	56.0	57.0	77.0
	17	44.5	90.0	90.0	87.0
	18	68.0	68.0	52.0	51.8
	19	46.0	52.0	74.0	60.0
	20	33.0	43.0	68.5	60.0
	21	42.5	54.0	48.0	40.0
	22	52.0	103.0	108.0	98.0
	23	55.4	100.0	98.0	61.5
	24	54.0	67.0	74.0	64.0
	25	94.0	107.0	113.0	89.0
	26	45.0	53.0	63.0	52.0
	27	80.0	91.5	98.0	87.0
	28	40.5	42.0	47.5	48.0
	29	71.5	88.0	95.0	73.0
	30	76.0	95.0	99.0	94.0
	31	38.5	68.0	72.0	77.0
Hourly means.		56.67	74.73	79.63	76.25

Mean time.		9h.	Noon.	3h.	6h.
1863.		°	°	°	°
April	1	69.0	80.0	81.0	76.5
	2	65.0	95.0	108.0	99.0
	3	84.0	114.0	115.0	93.0
	4	61.0	84.5	83.0	43.5
	5	44.0	70.5	75.0	80.0
	6	50.0	59.0	65.0	57.0
	7	46.5	73.5	80.0	87.0
	8	50.0	93.0	80.0	77.0
	9	79.0	99.0	100.0	92.0
	10	84.0	104.0	106.0	98.0
	11	86.0	109.0	110.0	98.0
	12	88.0	100.0	108.0	78.5
	13	60.5	73.5	88.0	90.0
	14	81.0	105.0	108.5	99.0
	15	47.0	48.0	53.0	51.0
	16	57.0	72.0	68.5	60.0
	17	91.0	112.0	103.0	67.0
	18	65.0	83.0	90.0	82.0
	19	93.0	118.0	119.0	108.0
	20	64.0	75.4	69.0	56.0
	21	48.0	75.5	89.0	83.0
	22	56.0	108.0	110.0	99.0
	23	51.5	54.0	55.0	54.5
	24	58.0	65.0	65.4	59.4
	25	91.0	102.5	105.0	101.0
	26	89.0	106.0	108.0	102.5
	27	95.0	113.0	110.0	91.0
	28	91.5	82.0	60.0	60.5
	29	72.0	120.0	113.0	110.0
	30	72.0	95.0	91.0	110.0
Hourly means.		69.63	89.65	90.55	82.11

Mean time.		9h.	Noon.	3h.	6h.
1863.		°	°	°	°
May	1	97.0	113.0	117.0	112.0
	2	104.0	115.8	120.0	111.0
	3	100.0	122.5	127.0	107.0
	4	79.0	85.0	118.5	109.0
	5	74.5	95.0	119.0	67.0
	6	53.0	63.0	64.0	52.0
	7	53.0	62.0	76.0	57.0
	8	53.0	57.5	65.0	61.0
	9	94.0	113.5	116.0	109.0
	10	100.8	124.0	128.0	116.0
	11	103.0	127.0	131.0	121.5
	12	106.5	129.0	133.0	120.0
	13	104.5	126.0	125.0	98.0
	14	69.0	118.0	121.0	111.5
	15	95.0	110.0	113.0	109.0
	16	100.0	116.0	115.0	109.0
	17	105.0	123.0	123.0	116.0
	18	101.0	120.0	117.0	108.0
	19	99.0	112.0	116.0	112.0
	20	99.0	118.0	120.0	114.0
	21	107.0	129.0	132.5	124.0
	22	107.4	127.0	128.0	123.0
	23	108.0	127.0	128.0	121.0
	24	104.0	122.0	125.0	115.0
	25	67.5	77.0	80.0	80.0
	26	89.0	100.0	105.0	110.0
	27	99.0	. .	125.0	114.0
	28	108.0	120.0	124.0	120.0
	29	109.0	121.5	127.0	106.0
	30	115.0	125.0	131.0	111.0
	31	113.0	134.5	127.0	126.0
Hourly means.		94.10	111.11	116.03	105.48

Mean time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.		°	°	°	°	°	°	°	°
June	1	74.0	68.0	65.0	124.0	129.0	132.0	124.5	78.0
	2	68.0	66.0	64.5	109.0	125.0	127.0	122.0	80.0
	3	65.0	62.0	58.0	69.0	118.0	129.0	120.0	68.0
	4	60.0	54.0	53.0	104.5	128.0	129.0	113.0	75.0
	5	62.0	60.0	60.0	105.4	123.0	127.0	121.0	74.0
	6	74.0	60.0	61.0	115.0	129.0	135.0	115.0	72.0
	7	64.0	58.0	53.0	103.0	125.0	125.0	101.0	58.0
	8	76.0	47.0	51.5	101.0	118.0	121.0	109.0	85.0
	9	52.0	50.0	54.0	104.0	122.0	124.0	120.0	72.0
	10	61.0	54.0	54.0	114.0	127.0	134.0	125.0	87.0
	11	60.0	60.0	67.0	115.4	102.0	96.0	112.0	78.0
	12	66.0	65.0	68.0	116.0	132.0	136.0	125.0	92.0
	13	62.0	60.0	61.0	106.0	133.0	131.0	119.0	64.0
	14	60.0	59.4	64.0	80.5	105.0	122.0	117.0	98.0
	15	59.0	58.0	60.0	109.0	134.0	137.0	133.0	100.0
	16	76.0	72.0	70.0	110.0	126.0	129.0	126.0	97.0
	17	59.0	56.0	62.0	109.0	135.0	137.0	129.0	88.0
	18	80.0	79.0	75.0	118.0	140.0	143.0	91.0	77.0
	19	70.0	68.0	66.0	76.5	124.0	130.5	114.0	70.0
	20	72.0	62.0	62.0	69.0	84.0	85.0	68.0	65.0
	21	63.0	62.0	64.0	77.0	101.0	110.0	120.0	80.0
	22	70.0	66.0	62.0	101.0	122.5	123.0	115.0	90.0
	23	62.0	60.0	61.0	105.0	122.0	125.0	117.0	68.0
	24	60.0	58.0	59.0	93.0	107.0	103.0	97.0	74.0
	25	59.0	52.0	56.0	100.0	106.0	95.5	80.0	67.0
	26	67.0	61.5	64.0	74.0	84.0	91.0	85.0	74.0
	27	65.0	62.0	66.0	76.5	83.0	97.5	90.0	70.0
	28	68.0	66.0	69.0	110.0	118.0	84.0	96.0	74.0
	29	68.0	67.0	67.0	81.5	90.0	120.0	105.0	70.0
	30	80.0	72.0	74.0	89.0	104.0	114.0	102.5	75.0
Hourly means.		66.07	61.49	62.37	98.84	116.55	119.75	100.40	77.33

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
July 1	69.5	69.0	69.5	85.5	109.0	122.0	126.0	76.0
2	95.0	78.0	73.0	100.0	133.0	133.0	103.0	87.0
3	70.0	70.0	74.0	94.3	129.0	136.0	117.0	79.0
4	96.0	76.0	70.0	99.0	131.0	135.0	95.0	70.0
5	70.0	68.0	70.0	79.0	104.0	105.0	103.0	75.0
6	74.0	68.0	71.0	77.0	81.5	83.5	87.0	75.0
7	68.0	70.0	72.5	98.0	98.0	121.0	125.0	76.0
8	74.0	72.0	73.0	83.0	87.0	92.0	107.0	85.0
9	64.0	64.0	64.5	103.0	125.0	124.0	114.0	74.0
10	85.0	67.0	68.0	116.0	137.0	140.0	125.0	82.0
11	66.0	68.0	74.0	90.0	129.0	130.0	113.0	86.0
12	86.0	83.0	74.0	89.0	123.0	125.5	109.0	71.0
13	70.0	69.0	68.0	72.0	75.0	74.8	85.0	71.0
14	75.0	73.0	74.0	95.0	133.0	132.0	122.0	79.0
15	72.0	72.0	72.0	98.0	127.0	130.0	123.0	78.0
16	89.0	70.0	69.5	105.0	. .	125.0	107.0	78.0
17	65.0	65.0	65.0	82.0	83.0	80.0	72.0	68.0
18	66.0	60.0	62.0	91.5	123.0	128.0	112.0	92.0
19	64.0	63.5	64.0	105.0	126.0	130.0	127.0	100.0
20	67.0	66.0	67.0	109.0	126.0	127.0	119.0	96.0
21	74.0	73.0	72.0	93.0	131.0	132.0	134.0	80.0
22	68.0	63.0	60.5	107.0	121.9	119.0	119.0	95.0
23	68.0	64.0	62.0	110.0	126 0	128.0	121.0	80.0
24	72.0	71.0	70.5	74.0	82.2	87.0	84.5	76.5
25	73.0	72.0	72.0	105.0	128.0	126.0	112 0	82.0
26	70.0	68.0	69.0	116.0	133.0	134.0	129.0	99.0
27	72.0	73.0	73.0	110.0	109.0	113.0	100.0	78.0
28	72.0	71.0	72.0	93.5	135.0	134.0	106.0	82.0
29	70.0	69.0	69.0	86.0	90.0	103.0	103.0	73.0
30	70.0	69.8	72.0	101.0	126.0	127.0	118.0	79.0
31	73.5	73.0	74.0	96.0	120.0	127.0	124.0	94.0
Hourly means.	73.16	69.62	69.71	95.57	116.05	119.49	111.01	81.18

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
August 1	70.0	69.5	72.0	114.0	125.0	129.0	118.0	96.0
2	76.0	75.0	75.0	115.0	134.5	138.0	126.0	96.0
3	80.0	76.0	74.0	117.0	136.0	141.0	141.0	117.0
4	78.0	76.0	72.0	106.0	133.0	140.0	131.0	78.0
5	78.0	74.0	72.0	121.0	134.0	132.0	128.0	80.0
6	75.0	72.5	69.0	114.0	133.0	137.0	116.0	80.0
7	76.0	75.0	70.0	110.0	132.0	135.0	126.0	90.0
8	78.0	76.0	75.0	117.0	133.0	138.0	117.0	90.0
9	82.0	73.0	69.0	118.0	134.0	138.0	131.0	102.0
10	74.0	74.0	74.0	115.0	135.0	142.0	135.0	100.0
11	78.0	77.0	75.0	119.0	136.0	141.5	132.0	102.0
12	79.0	80.0	73.0	114.0	132.0	139.0	116.0	92.0
13	78.0	74.0	72.0	82.0	100.0	104.0	108.0	88.0
14	73.0	73.0	73.0	114.0	132.0	135.0	127.0	82.0
15	74.0	74.0	69.0	112.0	134.0	135.0	130.0	92.0
16	76.0	75.0	74.0	110.0	134.0	135.0	129.0	100.0
17	76.0	82.0	68.0	89.0	128.0	134.0	133.0	81.0
18	66.0	64.0	63.0	106.0	126.0	129.0	128.9	70.0
19	64.0	60.0	59.0	. .	127.0	127.0	127.0	82.0
20	60.0	61.0	61.0	102.0	126.0	128.0	121.0	81.0
21	80.5	66.0	62.0	114.0	134.0	135.0	134.0	87.0
22	72.0	69.0	67.0	110.0	132.0	134.0	128.0	88.0
23	73.0	72.0	69.0	114.0	135.0	137.0	127.0	90.0
24	74.0	73.0	72.0	113.0	132.0	137.0	118.5	87.0
25	74.0	75.0	74.0	116.0	120.0	128.0	90.0	75.0
26	64.0	62.0	60.0	100.0	117.0	119.0	112.0	84.0
27	60.0	53.5	54.6	94.0	116.0	122.5	113.0	71.0
28	55.0	59.0	61.0	101.0	117.0	120.0	117.0	80.0
29	64.0	62.0	65.0	80.0	111.0	124.5	120.0	69.0
30	64.0	56.0	44.0	97.0	113.0	114.0	112.0	68.0
31	50.0	51.0	46.0	99.0	117.0	127.0	117.0	66.0
Hourly means.	71.66	69.66	67.21	107.77	127.37	128.21	122.58	85.94

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
September 1	54.0	54.0	53.0	113.0	122.0	123.5	96.0	70.0
2	54.0	56.0	60.0	74.5	119.0	125.0	118.0	69.0
3	57.0	55.0	53.0	95.0	118.0	119.0	112.5	72.0
4	64.0	63.0	61.0	74.0	116.0	119.0	115.0	68.0
5	54.0	50.0	49.0	99.0	119.0	120.0	113.0	70.0
6	60.0	56.0	57.0	105.0	125.0	122.0	118.0	69.0
7	57.0	63.0	60.0	103.0	125.0	127.0	118.0	76.0
8	65.0	66.0	65.8	96.0	124.0	125.5	115.0	75.0
9	68.0	66.0	66.0	91.0	127.0	124.0	82.0	66.0
10	64.0	. .	61.0	95.5	111.0	87.0	85.0	69.0
11	63.0	62.0	61.0	71.5	105.0	117.0	99.0	70.0
12	66.0	62.0	60.0	106.0	119.0	122.0	101.0	69.5
13	68.0	66.0	65.0	83.0	123.0	129.0	114.5	74.0
14	74.0	69.0	68.0	85.0	116.0	107.0	106.0	72.0
15	70.0	69.0	68.0	100.0	124.0	129.0	112.5	74.0
16	68.0	68.0	68.0	80.0	108.0	123.0	113.0	75.0
17	69.5	69.0	69.0	84.0	116.0	125.0	105.0	90.0
18	75.0	74.0	72.0	89.0	80.0	119.0	98.0	68.0
19	59.5	56.0	54.0	75.0	69.5	83.0	77.0	54.0
20	54.0	50.2	48.0	78.0	105.5	109.0	90.0	51.0
21	44.0	41.0	38.0	97.0	110.0	114.0	106.0	54.0
22	57.0	54.0	54.0	91.0	105.7	107.5	107.5	60.0
23	43.0	42.0	35.0	93.0	111.0	116.8	100.0	52.0
24	46.0	. .	44.0	92.5	108.0	110.0	104.0	61.0
25	54.0	52.0	50.0	69.0	89.0	103.0	103.0	50.0
26	50.0	45.0	42.0	88.0	103.0	106.0	96.5	48.0
27	42.0	39.0	35.0	92.0	106.0	109.0	101.0	48.0
28	40.0	39.0	38.0	93.0	113.5	115.0	106.0	54.5
29	48.0	43.0	39.0	91.0	113.0	115.0	103.0	54.0
30	48.0	49.0	48.0	73.0	115.0	114.0	104.0	59.0
Hourly means.	57.87	56.37	54.73	89.23	111.54	115.51	103.98	64.73

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
October 1	51.0	50.0	51.0	66.0	112.0	110.0	74.0	60.0
2	58.0	60.0	61.0	74.0	74.0	70.0	70.0	66.0
3	62.0	59.0	52.0	93.0	110.0	115.0	100.0	57.0
4	58.0	56.0	49.8	80.0	114.5	117.0	86.0	58.0
5	54.0	50.0	42.0	81.5	100.0	105.0	90 0	45.0
6	40.0	39.0	35.0	90.0	105.0	102.0	74.0	47.0
7	45.0	44.0	46.0	72.4	94.0	104.0	72.0	58.0
8	56.0	55.5	55.0	59.5	63.0	100.0	92.0	48.0
9	43.0	42.0	38.0	88.0	115.0	108.0	100.0	70.0
10	46.0	. .	46.0	67.0	79.5	90.5	90.0	54.5
11	50.0	44.0	40.0	87.5	106.0	108.0	81.0	46.0
12	38.0	39.0	34.0	86.0	101.0	103.5	105.0	42.0
13	39.0	37.0	36.0	83.5	102.5	102.5	102.0	50.0
14	41.0	43.0	42.0	67.0	80.3	94.3	94.0	56.0
15	51.0	52.0	54.0	71.0	98.3	98.0	74.0	63.0
16	63.0	63.0	63.0	75.0	76.0	89.3	90.0	64.0
17	60.0	54.0	50.0	97.0	108.0	108.6	107.0	60.0
18	55.0	56.0	55.5	99.0	113.0	113.0	97.0	62.0
19	60.0	56.0	52.0	59.5	106.0	106.0	85.0	48.0
20	45.0	42.0	40.0	86.0	107.0	107.0	107.0	49.0
21	46.0	45.0	44.0	88.5	112.0	112.5	99.0	59.0
22	57.0	54.0	47.0	82.5	100.0	100.0	88.0	46.0
23	41.5	42.0	46.0	68.0	111.0	106.0	66.0	54.0
24	58.0	54.0	52.5	49.5	51.0	50.0	48.0	46.0
25	46.0	37.0	35.0	81.0	99.0	89.5	71.0	44.0
26	40.0	. .	39.0	76.0	64.0	97.0	68.0	37.0
27	32.8	31.0	30.0	74.0	96.0	96.0	53.0	37.0
28	34.0	30.0	28.5	78.5	95.0	97.0	83.0	57.0
29	33.0	30.0	29.0	68.0	97.0	98.0	89.0	40.0
30	36.0	38.0	42.0	54.5	93.0	102.5	70.0	53.0
31	55.0	54.0	54.0	59.0	75.2	100.0	94.0	46.0
Hourly means.	48.20	46.78	44.82	76.21	95.43	100.01	84.49	49.11

Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°	1863.	°	°	°	°	°	°	°	°
November 1	41.0	39.0	36.0	100.0	105.0	99.0	91.0	38.0	December 1	21.0	21.0	19.0	64.0	79.0	79.5	70.0	31.0
2	35.0	32.0	. .	76.0	97.0	98.8	99.0	42.0	2	29.0	29.0	28.0	68.0	99.0	85.0	82.0	54.0
3	42.0	43.0	45.0	63.5	100.5	106.0	99.0	56.0	3	46.0	40.0	37.0	49.0	85.0	87.0	65.0	36.0
4	47.0	43.0	38.0	89.0	104.0	103.0	95.0	42.0	4	38.0	36.0	35.0	53.0	89.0	94.0	75.0	52.0
5	40.0	45.0	48.0	90.0	105.4	106.0	70.0	62.5	5	43.0	40.0	35.0	52.0	70.0	62.5	50.0	36.0
6	62.0	60.0	50.0	87.0	100.0	98.0	85.0	40.0	6	41.0	34.0	30.0	62.0	75.0	77.0	64.0	28.0
7	43.0	31.0	29.5	82.0	96.0	98.0	89.0	49.0	7	27.0	20.5	18.0	56.0	76.0	76.0	67.0	26.5
8	48.0	44.0	39.0	80.5	94.0	93.5	74.0	40.0	8	-20.0	18.0	16.0	52.0	72.0	77.5	64.0	28.0
9	38.0	38.0	37.0	44.0	90.5	93.5	70.0	40.0	9	28.0	24.0	24.0	43.0	81.0	79.0	56.0	36.0
10	32.0	. .	. .	64.0	79.0	86.5	72.0	35.0	10	31.0	29.0	28.0	56.0	85.5	79.7	62.0	24.0
11	28.0	27.0	26.0	60.0	91.0	90.0	55.0	44.0	11	22.0	22.0	24.0	33.0	48.5	49.5	48.0	35.0
12	40.0	40.0	38.0	82.0	108.0	114.0	94.0	48.0	12	34.0	33.0	32.0	46.0	51.0	55.0	50.0	43.0
13	45.0	36.0	34.2	72.0	94.0	100.0	88.0	48.0	13	49.0	51.0	54.2	59.0	102.5	104.5	80.0	52.0
14	45.0	38.0	30.0	66.0	93.0	96.5	80.0	50.0	14	51.0	52.0	54.0	57.0	94.0	96.0	65.0	44.0
15	55.0	55.0	54.0	55.0	86.0	90.0	78.0	45.0	15	38.0	36.0	30.0	58.0	87.5	82.5	67.0	33.5
16	43.0	42.0	40.0	50.0	88.0	95.8	58.0	50.0	16	31.0	28.0	24.0	54.3	74.5	71.0	42.0	32.0
17	45.0	43.0	41.0	72.0	91.0	91.5	76.0	42.0	17	33.8	33.0	33.0	38.0	42.0	43.0	42.5	43.0
18	40.0	40.0	40.0	57.0	87.5	95.0	85.0	41.0	18	41.5	39.5	38.0	44.0	62.0	57.0	43.0	35.0
19	38.0	38.0	37.0	62.0	85.5	98.0	90.0	47.0	19	34.0	30.0	28.0	32.0	75.0	76.0	32.0	24.5
20	43.0	41.5	40.0	80.0	102.0	104.5	92.0	60.0	20	23.0	18.0	16.0	45.0	67.0	68.0	46.0	20.0
21	51.0	49.0	48.0	49.0	53.0	.	56.0	48.0	21	20.0	19.0	18.0	52.0	66.0	46.0	39.0	29.0
22	48.0	46.0	40.0	74.0	89.0	90.0	77.0	40.0	22	29.8	29.0	28.0	32.0	39.8	39.0	32.0	30.0
23	30.0	31.0	30.0	68.0	89.0	90.0	60.0	45.0	23	26.0	25.0	24.0	42.5	66.0	39.0	32.0	20.0
24	42.0	41.0	40.0	46.0	55.8	59.0	55.0	48.0	24	17.0	16.0	15.0	44.0	70.0	73.0	58.5	59.0
25	49.8	48.0	47.5	56.0	86.0	87.0	53.0	42.3	25	30.0	17.0	17.0	53.0	66.3	66.0	67.0	29.0
26	40.0	34.0	30.0	68.0	88.2	85.0	76.0	32.0	26	25.0	20.0	15.0	52.0	70.8	69.2	41.0	35.0
27	26.0	25.0	24.0	46.0	87.0	76.0	49.5	35.0	27	34.0	33.5	33.0	38.0	43.0	44.0	42.0	40.0
28	35.0	40.0	44.0	48.0	50.5	52.0	62.0	48.0	28	36.0	36.0	36.0	37.0	. .	47.0	43.5	40.0
29	50.0	42.0	41.0	44.5	48.0	76.0	70.0	39.0	29	40.0	38.0	35.0	38.0	47.5	77.2	76.0	33.0
30	34.0	30.0	24.0	57.0	73.5	71.0	64.0	26.0	30	32.0	30.0	28.0	51.5	84.0	94.0	76.0	42.0
									31	32.0	34.8	36.1	39.0	41.0	44.5	41.0	42.0
Hourly means.	41.86	40.05	38.40	66.28	87.25	91.16	75.42	43.09	Hourly means.	32.36	30.07	28.65	48.39	70.33	68.99	55.44	35.89

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863.						1863.						1863.					
Jan. 1	0	NW.	3	C. K.	10	Jan. 2	0	NW.	3	Clear.	0	Jan. 3	0	NW.	1	C.	4
	3	NW.	1	S.	1		3	NW.	1	Clear.	0		3	NW.	1	C.	3
	6	NW.	2	C. K.	1		6	NW.	1	S.	2		6	NW.	1	S.	1
	9	NW.	3	Clear.	0		9	NW.	1	S.	1		9	N.	1	Hazy.	0
	Noon.	NW.	3	S.	1		Noon.	SE.	1	C. K.	7		Noon.	S.	1	Hazy.	0
	3	N.	3	S.	1		3	S.SE.	1	C.	7		3	S.	1	C. S.	3
	6	NW.	1	Clear.	0		6	SE.	1	S.	2		6	E.	1	Hazy.	0
	9	NW.	1	C.	1		9	W.NW.	1	C. S.	6		9	NE.	1	C.	3
Jan. 4	0	NE.	1	C.	6	Jan. 5	0	S.	1	C. K.	6	Jan. 6	0	S.SE.	1	C.	2
	3	E.	1	C.	5		3	S.SW.	1	C. K.	9		3	N.NE.	1	C. K.	7
	6	SE.	1	C S.	8		6	SW.	1	C. K.	7		6	N.NE.	1	C. S.	6
	9	S.	1	C. K.	7		9	S.SE.	1	C. K.	10		9	S.	1	C.	1
	Noon.	S.SE.	3	C. K.	9		Noon.	S.SE.	2	C. K. S.	7		Noon.	S.	1	N.	10
	3	S.	2	C. S.	9		3	S.SE.	1	Clear.	0		3	S.SW.	1	N.	10
	6	NW.	3	N.	9		6	S.SE.	1	C. S.	1		6	NW.	2	C. K.	9
	9	NW.	2	Clear.	0		9	S.	1	C.	2		9	NW.	2	C. S.	1
Jan. 7	0	W.	3	C. K.	9	Jan. 8	0	NW.	1	Clear.	0	Jan. 9	0	E.	1	N.	10
	3	NW.	4	C. S.	1		3	NW.	2	Clear.	0		3	NE.	1	K.	10
	6	NW.	4	S.	1		6	NW.	2	C. S.	3		6	NE.	1	K.	10
	9	NW.	4	C. S.	2		9	W.NW.	1	K.	10		9	NE.	1	C. K.	10
	Noon.	NW.	5	K.	5		Noon.	W.SW.	1	K.	10		Noon.	NE.	1	K.	4
	3	W.	5	K. S.	4		3	S.SE.	1	C. K. S.	5		3	NE.	1	Clear.	0
	6	NW.	3	S.	1		6	E.	1	C. K.	8		6	NE.	1	Clear.	0
	9	NW.	2	Clear.	0		9	NE.	1	K.	10		9	NE.	1	K.	10
Jan. 10	0	NE.	1	Snow.	10	Jan. 11	0	W.SW.	1	K.	10	Jan. 12	0	W.	2	C. K.	3
	3	NE.	1	K.	10		3	SW.	1	C. K.	10		3	NW.	2	S.	1
	6	NE.	1	K.	10		6	SW.	1	S.	1		6	NW.	1	Clear.	0
	9	E.	1	K.	10		9	S.SE.	1	C. K.	9		9	NE.	1	C.	2
	Noon.	SE.	1	N.	10		Noon.	S.	1	K.	10		Noon.	SE.	1	C. S.	4
	3	Calm.	0	N.	10		3	S.SW.	1	K.	10		3	S.	1	C. S.	3
	6	SE.	1	N.	10		6	SW.	1	C. S.	9		6	SW.	1	C.	1
	9	NW.	1	K.	10		9	W.	2	C. K.	7		9	SW.	1	Clear.	0
Jan. 13	0	NW.	1	S.	1	Jan. 14	0	N.NE.	1	K.	10	Jan. 15	0	S.	3	K.	10
	3	NW.	1	C. K.	8		3	NE.	1	K.	10		3	S.	3	K.	10
	6	NW.	1	K.	10		6	N.NW.	1	Fog.	10		6	S.	2	K.	10
	9	N.NE.	1	K.	10		9	S.	1	Fog.	10		9	S.	3	C. K.	10
	Noon.	NE.	1	C. K.	10		Noon.	S.	1	K.	10		Noon.	S.	4	C. K.	10
	3	NE.	1	C. K.	10		3	SE.	1	K.	10		3	S.	6	C. K.	10
	6	NE.	1	C. K.	10		6	S.	1	K.	10		6	S.	2	C. K.	9
	9	NE.	1	K.	10		9	S.SE.	4	K.	10		9	S.	3	C. K.	10

REMARKS.

January 3. A heavy white frost this morning.
4. Commenced raining at 5.10 p. m., with a fresh gale of wind. Amount of rain, 0. 080 inch.
6. Commenced raining at noon, and ceased at 4.30 p. m. Amount 0. 152 inch.
8. Commenced snowing lightly at 10 p. m. Depth ¼ inch.
10. Commenced raining at 11 a. m., and ceased at 8.30 p. m. Amount, 0. 610 inch.
12. At 6 a. m. a very brilliant meteor was seen passing directly over the western wing of the Observatory from the SE., leaving a luminous train along its track. It continued its flight about five seconds, and disappeared with an explosion.
14. A light mist at 0.20 a. m.
15. Commenced raining at 11.45 p. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Jan. 16	0	S.	3	N.	10	1863. Jan. 17	0	NW.	4	Clear.	0	1863. Jan. 18	0	NW.	2	Clear.	0
	3	S.	4	N.	10		3	NW.	4	S.	1		3	NW.	2	Clear.	0
	6	S.	4	N.	10		6	NW.	4	S.	1		6	NW.	1	Clear.	0
	9	S.	4	C. K.	10		9	NW.	3	C.	2		9	N.NE.	1	Clear.	0
	Noon.	NW.	4	C. K.	4		Noon.	NW.	3	C. K.	3		Noon.	NE.	1	Clear.	0
	3	W.NW.	4	C. K.	9		3	NW.	3	C. S.	3		3	E.	1	Clear.	0
	6	NW.	6	C. K.	10		6	NW.	2	S.	1		6	E.	1	Clear.	0
	9	NW.	6	C.	3		9	NW.	2	Clear.	0		9	N.	1	Clear.	0
Jan. 19	0	NW.	Airs.	Clear.	0	Jan. 20	0	NW.	1	Clear.	0	Jan. 21	0	NE.	4	N.	10
	3	NW.	1	Clear.	0		3	N.	Airs.	C.	4		3	NE.	4	N.	10
	6	NW.	1	S.	1		6	NE.	Airs.	K.	10		6	NE.	5	N.	10
	9	NE.	1	K.	10		9	NE.	1	C. K.	10		9	NE.	6	N.	10
	Noon.	E.	1	C. K. S.	7		Noon.	NE.	1	C. K.	10		Noon.	N. NE.	6	N.	10
	3	S.	1	C. S.	1		3	NE.	2	C. K.	10		3	N.	6	N.	10
	6	E.	1	C. S.	1		6	NE.	2	K.	10		6	N.	5	N.	10
	9	NE.	1	Clear.	0		9	NE.	3	N.	10		9	NE.	4	N.	10
Jan. 22	0	N.	5	N.	10	Jan. 23	0	NW.	1	K.	10	Jan. 24	0	SW.	1	K.	10
	3	N.	3	N.	10		3	N. NW.	1	K.	10		3	W.	1	C. K.	4
	6	N.	2	N.	10		6	N. NW.	1	K.	10		6	N.	1	K.	10
	9	N. NW.	1	Mist.	10		9	NW.	1	K.	10		9	NE.	1	C. K.	9
	Noon.	N. NW.	1	Lig't mist	10		Noon.	W.	1	C. K.	10		Noon.	S.	1	C. K.	8
	3	NW.	1	Fog; mist	10		3	SE.	1	C. S.	4		3	SE.	1	K. S.	10
	6	N.	1	Fog; mist	10		6	N. NW.	1	C. K. S.	7		6	SE.	1	K.	10
	9	NW.	2	Mist.	10		9	NW.	1	C. K.	3		9	SE.	1	K.	10
Jan. 25	0	E.	1	K.	10	Jan. 26	0	NW.	1	C. S.	4	Jan. 27	0	SE.	1	K.	10
	3	NE.	1	K.	10		3	W.	Airs.	Fog, C.	10		3	E.	1	N.	10
	6	N. NE.	1	K.	10		6	Calm.	0	Thick fog.			6	S.	1	K.	10
	9	S.	Airs.	C. K.	10		9	SE.	1	Fog.			9	NW.	Airs.	N.	10
	Noon.	SW.	1	C. K.	10		Noon.	SE.	1	Fog, C. K.	7		Noon.	NW.	4	N.	10
	3	SE.	1	C. S.	6		3	S. SE.	1	H'zy C.K.	10		3	NW.	3	N.	10
	6	S. SE.	1	C. K. S.	6		6	S.	Airs.	K.	10		6	NW.	2	N.	10
	9	S.	1	C.	2		9	W.	1	C. K.	6		9	NW.	2	N.	10
Jan. 28	0	N.	1	N.	10	Jan. 29	0	E. by S.	2	Snow.	10	Jan. 30	0	NW.	1	C. K.	8
	3	NE.	2	N.	10		3	E.	3	Snow.	10		3	NW.	1	C.	4
	6	NE.	2	N.	10		6	NW.	4	Snow.	10		6	NW.	1	S.	1
	9	N.	2	Snow.	10		9	NW.	3	Snow.	10		9	SW.	1	C. K.	9
	Noon.	N. by E.	3	Snow.	10		Noon.	NW.	4	S.	2		Noon.	NE.	1	C. K.	9
	3	N. by E.	4	Snow.	10		3	SW.	1	C. S.	4		3	W. SW.	3	C. K.	4
	6	N.	3	Snow.	10		6	SW.	1	C. S.	7		6	W.	3	C. K.	4
	9	N.	4	Snow.	10		9	S.	1	C. K.	10		9	W.	2	C.	4

REMARKS.

January 16. Ceased raining at 6.30 a. m. At 11.40 a. m. a shower of hail and rain, lasting 20 minutes. A shower of hail and rain at 1.40 p. m. Amount, 0.510 inch.
17. Zodiacal light quite bright at 7 p. m.
19. Zodiacal light quite bright and well defined as late as 7 p. m.
20. Commenced raining at 10 p. m. Rain during the day, 0.030 inch.
21. Wind changed from NE. to N. during the day. Weather squally, with heavy rain. Amount, 2.000 inches.
22. Heavy, gloomy weather, with light fogs and rain. Rain during day, 0.090 inch.
27. Commenced raining at 2.45 a. m. Light showers during the night, and rain constantly during the day. Amount of rain, 0.140 inch.
28. Commenced snowing at 3½ o'clock a. m. Melted snow and rain during the day, 0.200 inch.
29. At 15 minutes past 3 the wind changed to NW., with a fresh breeze. Stopped snowing at 8 a. m. A large circle around the moon. Melted snow, 0.680 inch.
30. A light shower of snow from the NW. at 50 minutes past 1 p. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1862. Feb. 13	0	NW.	3	S.	1	1863. Feb. 14	0	W.	1	S.	1	1863. Feb. 15	0	E. SE.	2	N.	10
	3	NW.	2	Clear.	0		3	SW.	1	C. K.	10		3	S.	1	N.	10
	6	NW.	2	S.	1		6	N. NE.	1	C. S.	3		6	S.	1	N.	10
	9	NW.	2	C. S.	2		9	E.	1	C.	2		9	S.	1	N.	10
	Noon.	W.	3	C. K.	4		Noon.	SE.	1	C.	2		Noon.	S.	1	K.	10
	3	NW.	2	C.	1		3	S. SE.	1	C. K.	9		3	W.	1	C. K.	7
	6	N. NW.	1	C.	1		6	E. SE.	2	C. K. S.	4		6	W. NW.	1	C. S.	8
	9	NW.	1	Clear.	0		9	E. SE.	2	K.	10		9	W.	4	S.	1
Feb. 16	0	W. NW.	2	C. S.	2	Feb. 17	0	NE.	1	K.	10	Feb. 18	0	E.	1	Snow.	10
	3	W. NW.	2	C. S.	1		3	NE.	1	N.	10		3	NE.	1	Snow.	10
	6	SW.	1	C. S.	4		6	NE.	1	N.	10		6	N. by E.	1	K.	10
	9	W.	1	C. S.	3		9	N. NE.	2	Snow.	10		9	N.	Airs.	N.	10
	Noon.	W. NW.	4	C. S.	4		Noon.	N. NE.	2	Snow.	10		Noon.	N.	1	N.	10
	3	W.	1	C. S.	2		3	N. NE.	2	Snow.	10		3	NE.	1	N.	10
	6	N. by E.	1	C. S.	2		6	N.	3	K.	10		6	N.	2	N.	10
	9	N. NE.	1	C. K.	10		9	N.	1	Fine s'w.	10		9	N. NE.	2	N.	10
Feb. 19	0	NE.	2	N.	10	Feb. 20	0	S.	1	K.	10	Feb. 21	0	W.	1	S.	2
	3	N.	1	N.	10		3	S. SW.	1	K.	10		3	SW.	1	C. S.	6
	6	N. by W.	1	N.	10		6	S. SW.	2	C. K.	8		6	E.	1	C. S.	4
	9	NW.	2	N.	10		9	W.	1	K. S.	9		9	NW.	1	C. K.	7
	Noon.	NW.	2	Mist.	10		Noon.	W.	8	C. S.	4		Noon.	NW.	3	C. K. S.	6
	3	NW.	2	Mist.	10		3	W.	6	C. K.	8		3	NW.	3	C. K.	6
	6	SW.	1	K.	10		6	W. by N.	5	K. S.	1		6	N. NE.	2	K.	10
	9	W.	Airs.	K.	10		9	NW.	2	S.	1		9	NE.	3	K.	10
Feb. 22	0	NE.	3	K.	10	Feb. 23	0	N.	3	Snow.	10	Feb. 24	0	N.	1	C.	2
	3	NE.	4	Snow.	10		3	N.NW.	2	S.	1		3	N.	1	C. K.	6
	6	N.NE.	2	Snow.	10		6	W.	1	C. K.	9		6	N.	1	K.	10
	9	NE.	4	Snow.	10		9	N.NW.	1	C. S.	2		9	N. by E.	1	Foggy.	10
	Noon.	N.	4	Snow.	10		Noon.	N.	1	Clear.	0		Noon.	SE.	1	C. K.	6
	3	N.	4	Snow.	10		3	N.	1	Clear.	0		3	S.SE.	1	C. K.	8
	6	N.	3	K.	10		6	NE.	1	C. S.	2		6	S.	Airs.	Clear.	0
	9	N.	1	K.	10		9	NW.	1	Clear.	0		9	N.	Airs.	Clear.	0
Feb. 25	0	NW.	Airs.	Clear.	0	Feb. 26	0	S.SE.	1	C. K.	10	Feb. 27	0	SW.	1	K.	10
	3	W.	1	Clear.	0		3	SE.	1	N.	10		3	S.	Airs.	N.	10
	6	N.NW.	1	C. S.	3		6	SE.	1	N.	10		6	S.	Airs.	K.	10
	9	NW.	Airs.	C. K.	6		9	SE.	1	N.	10		9	W. by N.	1	C. K.	8
	Noon.	S.	Airs.	Hazy.	0		Noon.	SE.	2	N.	10		Noon.	W.	2	C. K.	9
	3	SE.	Airs.	Hazy.	0		3	S.	Airs.	K.	10		3	W.	2	C. K.	9
	6	S.SE.	1	C. K.	5		6	S.	1	K.	10		6	W.	1	C. S.	6
	9	SW.	1	C.	3		9	S.	1	K.	10		9	NW.	1	C. K.	8

REMARKS.

February 15. Commenced raining moderately at midnight, and continued until 11 a. m. Rain, 0.250 inch.
16. Stars shooting from S. to N. at midnight, and at intervals until 3 o'clock a. m.
17. Commenced snowing at 3 a. m., and continued until 5½ p. m. A wet snow. Snow fell during the day about 8 inches in depth, and after being melted and gauged, 0.720 inch.
18. Amount of rain during the day, 0.650 inch.
19. Raining moderately about midnight, and continued until 9½ a. m. Rain gauged, 0.070 inch.
22. Commenced snowing about 10 minutes after 2 a. m. Snow during the day about 9 inches in depth; a very dry snow.
23. Snow continued from midnight until 10 minutes past 1 a. m.
24. Snowing lightly at 10 minutes past 7 a. m.
25. Large circle around the moon. A very heavy frost.
26. Commenced raining at 40 minutes past 1 a. m. Rain during the day, 0.700 inch.
27. Commenced raining at 15 minutes after 12 a. m. Amount of rain from midnight until 9 o'clock a. m., 0.300 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863.						1863.						1863.					
Feb. 28	0	W.NW.	1	C. K.	6												
	3	NW.	1	C. K.	10												
	6	NW.	2	C. K.	10												
	9	E.	1	C. K.	10												
	Noon.	NE.	1	C. K.	10												
	3	NE.	1	K.	10												
	6	E.	1	K.	10												
	9	E.	1	K.	10												
Mar. 1	0	NE.	1	N.	10	Mar. 2	0	W.SW.	2	Clear.	0	Mar. 3	0	S.SE.	1	K.	9
	3	NE.	1	N.	10		3	SW.	1	C.	1		3	SW.	1	K.	10
	6	NE.	1	N.	10		6	W.	1	C. S.	2		6	S.	1	K.	10
	9	NE.	1	N.	10		9	SE.	1	C. S.	6		9	SW.	1	Clear.	0
	Noon.	SW.	1	C. K.	10		Noon.	SE.	1	C.	3		Noon.	SW.	2	C. K.	9
	3	W. by S.	5	C. K.	3		3	SE.	1	C.	1		3	W.NW.	3	Snow.	10
	6	W.	2	C. S.	4		6	SE.	2	C. S.	2		6	W.NW.	4	N.	10
	9	W.	3	Clear.	0		9	SE.	1	C. K.	9		9	W.	1	S.	1
Mar. 4	0	NW.	2	S.	1	Mar. 5	0	NW.	3	Clear.	0	Mar. 6	0	S.SE.	3	S.	1
	3	W.NW.	3	C. K.	10		3	NW.	1	Clear.	0		3	E.SE.	2	K.	10
	6	W.NW.	3	C. K.	9		6	N.	1	Clear.	0		6	S.	3	N.	10
	9	W.NW.	3	C. K.	4		9	E.	2	Clear.	0		9	S.	3	K.	10
	Noon.	NW.	4	C. S.	3		Noon.	N. by E.	1	C.	1		Noon.	S.	3	C. K.	9
	3	NW.	4	C. S.	4		3	SE.	2	C.	5		3	S.	3	N.	10
	6	NW.	3	C. S.	3		6	S. by E.	1	S.	1		6	S.	1	C. K. S.	10
	9	NW.	3	Clear.	0		9	SE.	2	C. S.	3		9	SE.	1	K.	10
Mar. 7	0	NE.	1	K.	10	Mar. 8	0	N.	1	K.	10	Mar. 9	0	NE.	2	N.	10
	3	NE.	1	N.	10		3	N. by E.	1	K.	10		3	N.	1	K.	10
	6	NE.	1	N.	10		6	NE.	2	N.	10		6	W.	1	C. S.	2
	9	NE.	1	N.	10		9	N.	1	K.	10		9	NW.	3	C.	5
	Noon.	S.SE.	2	C. K.	10		Noon.	N.	1	N.	10		Noon.	W.NW.	4	C. K.	2
	3	SW.	1	N.	10		3	S. by E.	1	C. K.	6		3	W.	3	C. K.	4
	6	SW.	1	K.	10		6	E.	1	C. K.	10		6	W.	2	C. S.	3
	9	NW.	1	N.	10		9	E.	1	K.	10		9	NW.	2	C.	1
Mar. 10	0	NW.	3	K.	10	Mar. 11	0	N.	1	N.	10	Mar. 12	0	W.	3	C. S.	1
	3	NW.	1	K.	10		3	N.NW.	1	Snow.	10		3	W.NW.	3	C. S.	1
	6	E.	1	K.	10		6	N.NW.	1	Snow.	10		6	SW.	2	S.	1
	9	NE.	2	K.	10		9	NW.	1	C. K.	3		9	W.	3	C.	3
	Noon.	E.	1	N.	10		Noon.	NW.	4	C. K.	2		Noon.	W.	4	Snow.	10
	3	NE.	1	K.	10		3	W.	3	C. K.	6		3	W.	3	Snow.	10
	6	NE.	2	N.	10		6	W.NW.	3	C. K. S.	9		6	NW.	3	C. K.	7
	9	NE.	1	N.	10		9	W.NW.	3	C.	1		9	NW.	3	S.	10

REMARKS.

February 28. A light shower of hail and rain, commencing at 45 minutes past 4 p. m., and continuing, at intervals, until midnight. Amount of rain not measurable. Dark, heavy weather.

March 1. Commenced raining at midnight, and continued until 10 minutes past 10 a. m. Amount of rain during the morning, 0. 308 inch.

2. A light white frost this morning.

3. Commenced raining at 12 o'clock and 35 minutes a. m. At 9 a. m. rain and hail. Rain and snow at 15 minutes past 12 p. m. A snow storm with lightning and thunder at 30 minutes past 2 p. m. Rain and snow again at 25 minutes past 5 p. m. Amount during the day, 0.260 inch.

6. Commenced hailing at 10 minutes past 3 a. m., and continued, at intervals, during the morning. Amount gauged, 0.115 inch.

7. Rain during the day gauged, 0. 330 inch.

8. Commenced raining at 15 minutes after 5 a. m. Rain again at 30 minutes past 9 p. m., and continued until midnight. Rain during the day, 0. 300 inch.

9. Heavy rain at midnight. Amount, 0. 026 inch.

10. Commenced snowing at 9¼ a. m., and continued to snow and rain, at intervals, during the day. Melted snow and rain gauged, 0. 100 inch.

11. Commenced snowing at 2¼ a. m. Melted snow during the morning, 0.254 inch.

12. Snowing at 11 o'clock and 45 minutes, and continued, at intervals, during the afternoon.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Mar. 13	0	NW.	3	Clear.	0	1863. Mar. 14	0	NW.	1	S.	1	1863. Mar. 15	0	NW.	1	S.	1
	3	NW.	2	C. K.	4		3	W.	1	C. K.	4		3	N.	1	C. S.	6
	6	NW.	1	K.	10		6	SW.	1	C. S.	4		6	N.	1	C. K.	4
	9	SW.	2	C. K.	7		9	S.	1	C.	6		9	NE.	2	C. K.	7
	Noon.	NW.	3	C. K.	7		Noon.	SW.	1	C.	8		Noon.	NE.	2	C. K.	10
	3	W. NW.	3	C. K.	8		3	SW.	2	C. K.	9		3	E.	2	N.	10
	6	NW.	3	C. S.	4		6	SW.	1	C. K.	10		6	E.	2	N.	10
	9	W.	1	C. K.	4		9	SW.	1	S.	2		9	NE.	1	Snow.	10
Mar. 16	0	NE.	2	K.	10	Mar. 17	0	NW.	1	Clear.	0	Mar. 18	0	E.	1	K.	10
	3	NE.	1	K.	10		3	NW.	Airs.	Clear.	0		3	NW.	1	K.	10
	6	N.	1	Mist.	10		6	NW.	Airs.	Hazy.	10		6	W.	1	C. K.	10
	9	N.	1	Snow.	10		9	S.	1	Hazy.	10		9	N.	1	K.	10
	Noon.	N.	1	K.	10		Noon.	S.	3	Hazy.	0		Noon.	N.	1	N.	10
	3	N.	1	K.	10		3	S.	3	C.	3		3	NW.	1	N.	10
	6	NW.	1	C.	1		6	S.	1	C. S.	4		6	N. by W.	1	C. K. S.	8
	9	NW.	1	Hazy.	0		9	SE.	1	C. K.	7		9	NW.	3	S.	2
Mar. 19	0	N.	1	Clear.	1	Mar. 20	0	NE.	1	K.	10	Mar. 21	0	NE.	3	K.	10
	3	N.	2	S.	1		3	NE.	1	K.	10		3	NE.	2	K.	10
	6	N.	2	C. K.	9		6	N. NE.	1	K.	10		6	N. NE.	2	Snow.	10
	9	N.	2	C. K.	10		9	NE.	2	K.	10		9	NE.	2	Snow.	10
	Noon.	NE.	2	K.	10		Noon.	NE.	1	K.	10		Noon.	N. NE.	2	Snow.	10
	3	E.	2	C. K.	10		3	NE.	2	C. K.	8		3	N. NE.	1	Rain.	10
	6	NE.	1	K.	10		6	NE.	1	C. K.	10		6	N.	1	N.	10
	9	NE.	1	C. K.	4		9	NE.	2	K.	10		9	N.	2	N.	10
Mar. 22	0	NW.	1	N.	10	Mar. 23	0	W.	1	C. S.	4	Mar. 24	0	E.	2	K.	10
	3	NW.	1	C. K.	9		3	N.	1	C. K.	8		3	E. NE.	1	K.	10
	6	NW.	2	K.	10		6	NE.	1	K.	10		6	E.	1	K.	10
	9	NW.	1	K.	10		9	E.	1	C. K.	10		9	E.	2	K.	10
	Noon.	S.	1	C.	2		Noon.	E.	2	C. K.	9		Noon.	E.	2	K.	10
	3	SE.	1	Clear.	0		3	NE.	1	K.	10		3	E.	1	K.	10
	6	S.	1	C.	8		6	NE.	1	K.	10		6	E.	2	K.	10
	9	S.	1	C. S.	2		9	E.	1	K.	10		9	E. NE.	2	N.	10
Mar. 25	0	NE.	2	N.	10	Mar. 26	0	NW.	1	S.	1	Mar. 27	0	NW.	2	S.	1
	3	E.	2	N.	10		3	NW.	1	S.	1		3	NW.	2	S.	2
	6	SE.	1	K.	10		6	W. NW.	1	C. K.	9		6	NW.	2	C. S.	4
	9	S. SE.	2	C. K.	6		9	W.	3	K.	10		9	W. NW.	2	C. K.	4
	Noon.	S.	3	C. K.	9		Noon.	W.	1	Snow.	10		Noon.	NW.	3	C. K.	3
	3	W. NW.	4	C. K.	8		3	W.	2	K.	10		3	W.	2	C. K.	8
	6	NW.	3	C. K.	4		6	W.	2	C. K.	10		6	E.	1	C. K.	5
	9	W.	3	K.	10		9	W. NW.	2	C. K.	10		9	E.	1	K.	10

REMARKS.

March 13. Commenced snowing at 8 o'clock a. m.

14. Shooting stars seen at intervals from 8 to 11 p. m.

15. Commenced hailing at 50 minutes past 1 p. m. Thunder and hail at 40 minutes past 3 p. m. Sharp lightning, heavy thunder, and fine hail, at 5 minutes past 5 p. m. Thunder again at 6½ p. m., at 20 minutes before 7, at 8½ p. m., and at intervals until 2 o'clock a. m. Depth of hail about 2 inches. There was an artillery duel this evening between winter and spring. The firing was rapid, terrific, and violent, until 8 o'clock p. m. Result indefinite.

16. Shooting stars from the east at 9 p. m.

18. Shooting stars from the NE. at 9 p. m., and at intervals until midnight. Commenced raining at 20 minutes past 11 a. m. Zodiacal light very brilliant; apex extending to Pleiades at 7¼ p. m.

19. Shooting stars from NE. from midnight until 2 o'clock a. m.

20. Commenced snowing at 7 o'clock and 30 minutes in the morning.

21. Snowing lightly at 20 minutes after 12, midnight; and snowing again at 10 minutes past 3 a. m. Melted snow and rain during the day, 0.800 inch.

24. Light mist of rain at 7 o'clock and 45 minutes a. m. Raining moderately at 50 minutes past 3 p. m. Steady rain commenced at 6 o'clock and 35 minutes p. m. Rain during the day, 0.570 inch.

25. Heavy rain at midnight. A few drops of rain at 3 o'clock in the morning. Amount during morning, 0.228 inch.

26. A light shower of rain at 7 o'clock a. m. Snowing at half-past 8 a. m.

27. A large circle around the moon at 7 o'clock p. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Mar. 28	0	E.	1	C. K.	8	1863. Mar. 29	0	W. SW.	1	Clear.	0	1863. Mar. 30	0	NW.	2	S.	1
	3	E. SE.	2	K.	10		3	NW.	4	K.	10		3	NW.	1	S.	1
	6	SE.	2	N.	10		6	NW.	3	C. K. S.	10		6	NW.	2	C. S.	2
	9	NE.	1	N.	10		9	NW.	3	C. K.	6		9	NW.	3	S.	4
	Noon.	NE.	1	N.	10		Noon.	W. NW.	4	C. K.	6		Noon.	N.	1	S.	2
	3	SW.	1	N.	10		3	NW.	4	C. K.	6		3	E.	1	C. S.	4
	6	SW.	1	C. K.	9		6	NW.	4	C. S.	3		6	SE.	2	C. K.	9
	9	SW.	1	C.	1		9	NW.	1	Clear.	0		9	SE.	1	C. K.	10
Mar. 31	0	S.	1	K.	10												
	3	NE.	1	Snow.	10												
	6	E.	1	Snow.	10												
	9	NE.	1	Snow.	10												
	Noon.	NW.	1	Rain.	10												
	3	NW.	2	C. K.	10												
	6	W.	1	C. K.	7												
	9	SW.	Airs.	Clear.	0												
April 1	0	SW.	2	C. K.	2	April 2	0	S.	1	C.	1	April 3	0	NW.	3	C.	10
	3	W.	2	C. K.	4		3	SE.	1	S.	2		3	W.	1	C. K.	6
	6	NW.	4	C. S.	2		6	S.	2	C. K.	8		6	W. NW.	1	C. S.	1
	9	NW.	5	C. S.	4		9	S by W.	2	C.	10		9	NW.	1	C. S.	2
	Noon.	W. NW.	7	S.	1		Noon.	S.	3	C. K.	9		Noon.	N.	1	C. K.	5
	3	W. NW.	4	S.	2		3	S. by W.	2	C. K.	10		3	N.	2	C. K.	6
	6	SW.	1	C.	1		6	N.	1	N.	10		6	N.	2	C. K.	6
	9	SW.	1	Clear.	0		9	NW.	6	N.	10		9	N.	3	C.	7
April 4	0	N.	3	Clear.	6	April 5	0	NW.	4	Snow.	10	April 6	0	SW.	1	C. K.	9
	3	N.	3	S.	1		3	NW.	4	Snow.	10		3	SW.	1	C.	1
	6	N.	3	C. K.	4		6	NW.	4	Snow.	10		6	S.	1	S.	1
	9	N. NW.	3	C. K.	7		9	NW.	4	Snow.	10		9	S. SE.	1	C. K.	10
	Noon.	N. NW.	4	C. K.	9		Noon.	W. NW.	4	C. K.	10		Noon.	S. SE.	1	K.	10
	3	N. NW.	4	C. K.	10		3	W. NW.	3	C. K.	9		3	W. SW.	1	K.	10
	6	N.	8	Snow.	10		6	W. NW.	2	C. K.	10		6	E. NE.	1	C. S.	6
	9	N.	6	Snow.	10		9	W. NW.	1	C. K.	9		9	N.	Airs.	C. K.	3
April 7	0	SW.	1	N.	10	April 8	0	NW.	2	K.	10	April 9	0	NW.	1	K.	10
	3	NW.	3	C. S.	2		3	NW.	1	K.	10		3	W.	2	K.	10
	6	NW.	2	C. K.	8		6	NW.	1	K.	10		6	NW.	2	K.	3
	9	NW.	3	N.	10		9	NW.	2	C. K.	10		9	W. NW.	2	C.	1
	Noon.	W. NW.	3	C. K.	7		Noon.	NW.	2	C. K.	9		Noon.	NW.	2	C.	4
	3	NW.	3	C. K.	8		3	W.	2	C. K.	10		3	W.	3	Clear.	0
	6	NW.	2	C. K.	7		6	W.	1	C. S.	6		6	W.	2	Clear.	0
	9	W. NW.	2	K.	10		9	NW.	1	C. S.	3		9	W.	1	Clear.	0

REMARKS.

March 28. Commenced raining at 4. 30 in the morning. Thunder at 9¼ a. m.; at 3 p. m. wind changed to SW. Rain ceased at 4. 30 p. m. Amount of rain, 0. 870 inch.

29. At 1 o'clock and 50 minutes a. m., the wind changed from SW. to NW., and blew a heavy gale, lasting about 12 or 15 minutes; a heavy, dark cloud at the same time, with light flashes of lightning.

30. Halo around the moon at midnight.

31. Commenced snowing in very large flakes between 1 and 2 o'clock a. m., and continued until 50 minutes after 7 a m. Commenced raining at 7 o'clock and 50 minutes a. m. Snowing again at 8 o'clock and 20 minutes a. m. A light shower of rain at 10 o'clock and 40 minutes. Rain and hail at 11 o'clock and 15 minutes a. m. Shooting stars at 9 p. m. Melted snow and rain during the day, 0. 780 inch.

April 2. Thunder at 4 o'clock p. m. Light shower of rain commenced at 5 o'clock and 15 minutes p. m.

3. A very brilliant meteor from the SE. appeared at midnight, continuing visible about 5 seconds, and leaving a train of light in its course of about 45°.

4. Commenced snowing at 20 minutes after 5 o'clock p. m.

5. Snow ceased at noon. Depth of snow about 10 inches. Snow melted and gauged, 0. 260 inch.

6. Raining at 4 o'clock p. m. Light showers at 5 o'clock p m. Commenced raining again at 11 o'clock p. m., and continued until 20 minutes after 12. Amount of rain during the day, 0. 055 inch.

7. A light shower of rain at midnight. Raining and snowing at 8 o'clock and 40 minutes a. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. April 10	0	W.	1	Clear.	0	1863. April 11	0	S.	1	Hazy.	0	1863. April 12	0	S.	1	Hazy.	
	3	NW.	1	Clear.	0		3	S.	1	C.	3		3	S.	1	Hazy.	
	6	S.	Airs.	Hazy.			6	S. SE.	1	C.	6		6	S.	1	C.	4
	9	S. SE.	1	Hazy.	0		9	S.	Airs.	Hazy.			9	S.	1	C.	10
	Noon.	S.	2	Hazy.			Noon.	S.	1	Hazy.			Noon.	S.	1	C. K.	10
	3	S.	3	C.	7		3	S.	2	Hazy.			3	W.	1	C. K.	10
	6	SE.	1	C. K.	6		6	S.	1	C. K.	7		6	S.	1	K.	10
	9	S.	Airs.	C. S.	4		9	S.	1	Hazy.			9	W.	1	K.	10
April 13	0	NW.	2	N.	10	April 14	0	N. NE.	Airs.	Clear.	0	April 15	0	E.	2	K.	10
	3	NW.	1	K.	10		3	NW.	Airs.	Hazy.			3	E.	1	K.	10
	6	N.NW.	2	C. K.	10		6	W.	Airs.	Foggy.			6	E. by N.	1	N.	10
	9	N.	1	K.	10		9	SE.	1	C.	7		9	NE.	2	N.	10
	Noon.	NW.	1	K.	10		Noon.	E.	1	C. K.	7		Noon.	NE.	2	N.	10
	3	N.	1	K.	10		3	SE.	1	C. K.	7		3	NE.	4	N.	10
	6	NE.	1	Clear.	0		6	E.	1	K.	10		6	NE.	4	N.	10
	9	NE.	1	Clear.	0		9	E.	2	C.	4		9	NE.	4	N.	10
April 16	0	SE.	1	N.	10	April 17	0	NW.	2	K.	10	April 18	0	NW.	2	C. K.	3
	3	N.	1	N.	10		3	NW.	1	K.	10		3	W.	1	C. K.	6
	6	NW.	2	N.	10		6	W.	2	C. K.	8		6	W.NW.	1	K.	10
	9	W.	2	N.	10		9	W.	2	C. K.	10		9	N. by E.	1	Rain.	10
	Noon.	NW.	2	Mist.	10		Noon.	NW.	1	C. K.	10		Noon.	SE.	1	K.	10
	3	NW.	1	N.	10		3	S.SE.	1	C. K.	10		3	S.	1	N.	10
	6	NW.	1	N.	10		6	S.SW.	1	C. K.	10		6	N. NW.	Airs.	N.	10
	9	W.	2	C. K.	7		9	SW.	1	K.	10		9	E.	Airs.	N.	10
April 19	0	NW.	1	Clear.	0	April 20	0	SE.	1	C. K.	3	April 21	0	NE.	1	N.	10
	3	NW.	1	C.	3		3	N.	Airs.	C. K.	6		3	NE.	2	N.	10
	6	NW	1	C. K.	9		6	W.	Airs.	K.	10		6	N. by E.	2	K.	10
	9	SE.	Airs.	Hazy.			9	E.SE.	1	Rain.	10		9	N. by E.	2	K.	10
	Noon.	SE.	1	C. K.	4		Noon.	N. by E.	1	K.	10		Noon.	NE.	2	K.	10
	3	S.	1	C.	2		3	NW.	2	N.	10		3	E.	2	C. K.	10
	6	E.	1	C. K.	7		6	NE.	1	N.	10		6	E.	1	C. K.	6
	9	SE.	1	K.	2		9	NE.	2	N.	10		9	SE.	1	Clear.	0
April 22	0	E. SE.	1	Clear.	0	April 23	0	SE.	1	K.	9	April 24	0	NW.	3	N.	10
	3	N.	Airs.	C.	4		3	NE.	1	K.	10		3	W.	4	N.	10
	6	N.	Airs.	C. K.	8		6	NE.	1	N.	10		6	W. NW.	4	N.	10
	9	NE.	1	K.	10		9	N. NE.	2	N.	10		9	W. NW.	3	N.	10
	Noon.	S. by W.	1	C. K.	6		Noon.	NE.	2	N.	10		Noon.	NW.	4	N.	10
	3	SE.	1	C. K.	9		3	N.	1	N.	10		3	NW.	5	N.	10
	6	E.	1	C. K.	8		6	N. NE.	1	N.	10		6	NW.	1	N.	10
	9	E.	1	C.	4		9	NE.	1	N.	10		9	S.	1	C. K.	8

REMARKS.

April 10. A heavy white frost this morning.
11. First bloom on apricot trees.
12. Raining at 9 o'clock and 20 minutes p. m. Amount of rain during the day, 0. 140 inch.
13. Blossom on peach tree discovered to-day.
14. A heavy frost this morning.
15. Commenced raining at 5 o'clock a. m. Rain during the day 1. 500 inch.
20. Commenced raining at 7 o'clock a. m., and continued at intervals during the day. Amount, 0. 300 inch.
22. Sharp, white frost this morning.
23. Commenced raining at 4 o'clock and 30 minutes a. m. Amount, 1. 900 inch.
24. First bloom appeared on cherry tree. Rain ceased 25 minutes before 6 o'clock p. m. Rain, 0. 340 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863.	h.m.					1863.	h.m.					1863.	h.m.				
April 25	0	NW.	1	S.	2	April 26	0	NW.	1	Clear.	0	April 27	0	NW.	1	S.	1
	3	NW.	2	Clear.	0		3	NW.	1	Clear.	0		3	W. NW.	1	S.	1
	6	NW.	3	C. S.	2		6	NW.	2	Clear.	0		6	W.	1	C.	4
	9	NW.	6	S.	1		9	W. NW.	2	Clear.	0		9	SE.	Airs.	C.	1
	Noon.	NW.	5	Clear.	0		Noon.	NW.	2	C.	4		Noon.	SE.	1	C. S.	2
	3	NW.	4	Clear.	0		3	NW.	3	Clear.	0		3	SE.	1	C. K.	6
	6	NW.	4	Clear.	0		6	NW.	1	Clear.	0		6	SE.	1	C. K.	8
	9	NW.	2	Clear.	0		9	NW.	1	Clear.	0		9	S.	Airs.	C.	3
April 28	0	S.	1	C.	1	April 29	0	SE.	Airs.	K.	10	April 30	0	NE.	1	K.	10
	3	NW.	Airs.	S.	1		3	NW.	Airs.	K.	10		3	NE.	1	Mist.	10
	6	S.	Airs.	Hazy.			6	N. NE.	Airs.	K.	10		6	N.	1	Mist.	10
	9	S.	1	C. K.	10		9	E. SE.	Airs.	K.	10		9	NE.	1	K.	10
	Noon.	S. SE.	2	N.	10		Noon.	S.	1	C. K.	10		Noon.	SE.	1	C. K.	10
	3	S. SE.	1	N.	10		3	S.	1	C. K.	7		3	NW.	1	C. K.	8
	6	SE.	Airs.	K.	10		6	NE.	1	K.	10		6	NW.	1	C. K. S.	9
	9	SE.	1	K.	10		9	NE.	1	K.	10		9	NW.	1	S.	1
May 1	0	W.	1	Clear.	0	May 2	0	SE.	1	C.	1	May 3	0	S.	1	Clear.	0
	3	NW.	1	Hazy.			3	SE.	1	S.	1		3	S.	1	Clear.	0
	6	W.	1	Fog.			6	S.	1	C.	2		6	SE.	1	Hazy.	
	9	S.	Airs.	C.	1		9	S.	1	C. K.	3		9	SE.	1	C.	6
	Noon.	SE.	1	C.	2		Noon.	SE.	1	C. K.	4		Noon.	SE.	3	C. K.	5
	3	S.SE.	1	C. K.	4		3	SE.	1	C. K.	5		3	S.SE.	4	C. K.	7
	6	SE.	1	Hazy.			6	S.SE.	Airs.	C.	2		6	S.SE.	4	C. K.	8
	9	S.	1	Clear.	0		9	S.	1	C. K.	4		9	S.	1	C.	4
May 4	0	S. by E.	1	C. K.	6	May 5	0	N.	1	C.	1	May 6	0	NE.	3	N.	10
	3	SE.	1	C. K.	6		3	N.	1	C.	5		3	NE.	2	N.	10
	6	SE.	Airs.	C. S.	5		6	NE.	1	Fog.			6	NE.	2	N.	10
	9	SW.	1	C. K.	10		9	E.	1	Fog.	10		9	N. by W.	3	N.	10
	Noon.	SE.	1	C. N.	8		Noon.	NE.	1	K.	10		Noon.	N.	4	N.	10
	3	S.	1	C. K.	7		3	NE.	3	K.	10		3	N.NE.	3	K.	10
	6	S.	Airs.	C. K.	8		6	NE.	4	N.	10		6	NE.	3	N.	10
	9	SW.	1	C. K.	5		9	NE.	4	N.	10		9	N.NE.	2	N.	10
May 7	0	N.	1	K.	10	May 8	0	N.	2	K.	10	May 9	0	W.	1	K.	10
	3	N.	2	K.	10		3	N.	1	K.	10		3	NW	1	K.	10
	6	NW.	2	K.	10		6	NE.	1	K.	10		6	W.NW.	2	C.	1
	9	NE.	1	K.	10		9	NE.	1	N.	10		9	NW.	1	Clear.	0
	Noon.	NW.	2	K.	10		Noon.	NE.	2	N.	10		Noon.	NW.	1	C.	3
	3	N.	1	K.	10		3	N.NE.	2	N.	10		3	W.	1	C.	1
	6	N.NW.	1	K.	10		6	N.	1	K.	10		6	W.NW.	1	C. K.	6
	9	N.	1	Mist.	10		9	N.	1	K.	10		9	S.	1	C. K.	3

REMARKS.

April 27. Halo around the moon at midnight.

28. Halo around the moon during the night. Commenced raining at 11.30 a. m., and continued at intervals. Amount of rain during the day 0.340 inch.

30. Thunder at 3 o'clock and 25 minutes p. m. Commenced raining at 5 o'clock and 20 minutes, p. m. Rain during the day, 0.060 inch.

May 4. Lightning and thunder at 7.45; raining at 8.20 p. m., and continued about 25 minutes. Began raining at 9 a. m.; wind changing from S. to SW. and NW. Amount of rain, 0.320 inch.

5. Lightning and thunder from 10 a. m. until 4 p. m. Rain during the day, 1.100 inch.

6. Lightning and thunder at 7 p. m. Hailing at 7.30 p. m. Lightning continued until 10 p. m. Amount of rain during the day, 0.930 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Noon.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. May 10	0	SE.	Airs.	C.	3	1863. May 11	0	N.NE.	1	C. K.	3	1863. May 12	0	SE.	1	C.	2
	3	S.	Airs.	Clear.	0		3	NW.	1	Clear.	0		3	S.	Airs.	Clear.	0
	6	S.	Airs.	S.	2		6	NW.	1	C.	7		6	S.	0	Hazy.	0
	9	SE.	1	Clear.	0		9	S.	Airs.	C.	2		9	SE.	1	Clear.	0
	Noon.	NW.	1	C. K.	4		Noon.	SW.	1	C. S.	4		Noon.	SW.	2	C.	2
	3	SW.	2	C. K.	6		3	SW.	2	C. S.	4		3	SE.	2	K.	1
	6	S.	1	C. S.	2		6	S.	1	C. K.	9		6	S.SE.	2	C. K.	2
	9	S.	Airs.	S.	1		9	S.	1	Clear.	0		9	NW.	2	C. K.	4
May 13	0	N.	1	C. K.	3	May 14	0	W.NW.	1	N.	10	May 15	0	NW.	3	Clear.	0
	3	NW.	1	C.	2		3	N.	1	N.	10		3	W.	2	Clear.	0
	6	NW.	1	C. K.	4		6	NE.	1	K.	10		6	W.NW.	2	Clear.	0
	9	S.SW.	Airs.	C. K.	7		9	NE.	1	N.	10		9	NW.	4	Clear.	0
	Noon.	W.	1	C. K.	4		Noon.	S.SE.	1	C. K.	6		Noon.	NW.	3	C.	1
	3	N.NW.	1	C. K.	8		3	SE.	2	C. K.	3		3	W.	3	C.	1
	6	N.NE.	1	N.	10		6	NW.	4	C. K.	8		6	NW.	2	Clear.	0
	9	NW.	1	K.	10		9	NW.	5	C. K.	4		9	NW.	1	Clear.	0
May 16	0	NW.	1	Clear.	0	May 17	0	S.	1	C.	2	May 18	0	NW.	1	Clear.	0
	3	SW.	1	Clear.	0		3	S.SE.	2	C. K.	5		3	W.	1	C. S.	3
	6	S.	2	Clear.	0		6	SW.	1	C. K.	7		6	NW.	2	Clear.	0
	9	S. by W.	3	Clear.	0		9	SE.	1	Hazy.			9	NW.	3	C. S.	3
	Noon.	S.	3	Clear.	0		Noon.	SW.	1	Hazy.	0		Noon.	NW.	3	C. K.	5
	3	S.SE.	3	C.	6		3	W.	1	C. K.	3		3	W.NW.	3	C. K.	7
	6	S.	4	C. S.	4		6	NW.	3	C. K.	6		6	NW.	4	S.	1
	9	S.	2	S.	1		9	NW.	3	K.	7		9	NW.	1	Clear.	0
May 19	0	NW.	1	Clear.	0	May 20	0	SW.	1	Clear.	0	May 21	0	N.	1	Clear.	0
	3	NW.	2	Clear.	0		3	SW.	Airs.	Clear.	0		3	W.	1	Clear.	0
	6	NW.	2	Clear.	0		6	SW.	Airs.	Hazy.	0		6	W.	2	Hazy.	0
	9	W.	2	Clear.	0		9	SE.	1	C.	6		9	W.	2	Hazy.	0
	Noon.	W. NW.	3	C.	1		Noon.	S. SE.	1	Hazy.			Noon.	W.	1	C. K.	8
	3	W.	2	Clear.	0		3	S.	2	C.	7		3	W. SW.	1	C.	2
	6	W.	1	Clear.	0		6	S. SW.	Airs.	C. K.	9		6	W. NW.	1	Hazy.	
	9	SW.	1	Clear.	0		9	S.	1	S.	1		9	W.	1	Clear.	0
May 22	0	W.	1	Hazy.	0	May 23	0	W.	2	Hazy.		May 24	0	W.	1	Hazy.	
	3	W.	1	Hazy.	0		3	W.	1	Clear.	0		3	W.	1	Hazy.	
	6	W.	2	Hazy.	0		6	W.	2	Hazy.			6	W.	1	Foggy.	
	9	N. NW.	1	Hazy.	0		9	W.	1	Hazy.			9	NW.	1	Hazy.	
	Noon.	NE.	1	Hazy.	0		Noon.	SE.	1	Hazy.			Noon.	W.	2	Hazy.	
	3	S.	1	Hazy.			3	S. SE.	1	Hazy.			3	E.	1	Hazy.	
	6	S.	Airs.	Hazy.			6	S.	Airs.	Hazy.			6	SE.	1	K.	10
	9	W.	1	Hazy.			9	S.	1	Hazy.			9	E.	1	K.	9

REMARKS.

May 11. Shooting stars at midnight.
12. Lightning and thunder from 7 to 12 p. m.
13. Lightning at 3 o'clock a. m. Lightning, thunder, and rain at 3 o'clock and 35 minutes p. m. Intense lightning in the south during the evening. Rain during the storm, 0. 300 inch.
14. Thunder at 3 p. m. Commenced raining at 3 o'clock and 45 minutes p. m., with heavy wind from the NW. Amount of rain gauged, 0. 110 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. May 25	0	NE.	1	K.	10	1863. May 26	0	NE.	2	K.	10	1863. May 27	0	S.	1	C. K.	7
	3	N. NE.	3	Mist.	10		3	NE.	1	K.	10		3	S. SE.	2	C. K.	5
	6	NE.	3	Mist.	10		6	NE.	1	K.	10		6	N. NE.	2	C. K.	8
	9	NE.	2	K.	10		9	E. SE.	1	C. K.	10		9	NE.	2	C. K.	6
	Noon.	NE.	3	K.	10		Noon.	SE.	2	C. K.	10		Noon.				
	3	E. NE.	3	K.	10		3	S.	2	C. K.	10		3	SE.	2	C.	2
	6	E. NE.	2	K.	10		6	E. NE.	2	K.	10		6	S. SE.	2	C.	1
	9	E.	1	K.	10		9	E.	1	K.	10		9	S. SW.	1	Clear.	0
May 28	0	SW.	1	Clear.	0	May 29	0	S.	1	C.	4	May 30	0	SE.	3	C. K.	9
	3	NW.	1	Clear.	0		3	SW.	1	C.	3		3	SE.	2	C. K.	10
	6	W.	1	Hazy.			6	S. SW.	1	C.	6		6	S.	2	K.	10
	9	S.	1	Hazy.			9	S.	2	C.	3		9	S.	3	C. K.	10
	Noon.	S. SE.	2	C.	7		Noon.	S.	3	C. K.	5		Noon.	S.	3	C. K.	6
	3	S. by E.	2	C.			3	SE.	2	C. K.	9		3	S.	3	C. K.	9
	6	SE.	1	C.	3		6	E. by S.	3	C. K.	10		6	S.	4	C. K.	6
	9	S.	1	C. S.	4		9	SE.	3	C. K.	5		9	S.	4	C. K.	4
May 31	0	S.	3	C. K.	6												
	3	S.	2	C. K.	9												
	6	S. SW.	2	C. K.	8												
	9	S.	3	C. K.	6												
	Noon.	S.	4	C. K.	7												
	3	S. SW.	6	C. K.	4												
	6	S. SW.	3	C. S.	2												
	9	S. by W.	2	C. S.	1												
June 1	0	SW.	1	C. K. S.	10	June 2	0	W.	2	C. K.	4	June 3	0	N.	1	C. K.	10
	3	S. by W.	1	C. K.	4		3	W. by N.	4	C. S.	2		3	NW.	1	K.	10
	6	S.	1	C. S.	4		6	NW.	3	Clear.	0		6	N.	1	K.	10
	9	S. SW.	3	C. K.	5		9	W.	4	C.	2		9	W.	2	K.	10
	Noon.	SW.	3	C. K.	5		Noon.	W. SW.	4	C.	6		Noon.	NW.	2	C. K.	8
	3	SW.	3	C.	1		3	W.	5	C. K.	4		3	NW.	2	C. K.	7
	6	W.	4	C.	3		6	W. NW.	1	C. K.	6		6	NW.	1	C. K.	9
	9	W.	2	C. S.	3		9	NW.	1	C. K.	10		9	NW.	1	S.	1
June 4	0	NW.	1	C. K.	8	June 5	0	SE.	2	C. K.	10	June 6	0	S.SE.	2	C. K.	6
	3	NW.	1	C.	2		3	SE.	1	C. K.	8		3	S.	1	K.	9
	6	NW.	1	C.	1		6	S.	1	C. S.	4		6	S. by W.	1	Clear.	0
	9	W.	1	C.	1		9	S.	2	C. K.	9		9	W.NW.	2	C.	4
	Noon.	NW.	1	C. S.	3		Noon.	S.	2	C. K.	9		Noon.	W.	3	C. K.	4
	3	SE.	1	C.	3		3	S.SE.	2	C. K.	9		3	NW.	2	C. K.	6
	6	SE.	1	C. K.	8		6	E.	2	C. K.	10		6	N.	2	C. K.	9
	9	SE.	2	C.	3		9	SE.	3	C. K.	8		9	NE.	1	C. K. S.	6

REMARKS.

May 25. Lightning in the east at midnight and continued until 2 a. m.

31. Commenced raining at 12 o'clock and 50 minutes p. m. At 9 o'clock p. m. a very remarkable meteor, having the appearance of a bright rocket, passed from southeast to northwest, leaving a train of light in its course, and descending within 8 degrees of the earth.

June 3. Raining at 4 o'clock a. m. Rain during the day, 0. 094 inch. Gauged at 11 a. m.

6. A light shower of rain at 6. 30 p. m., with distant thunder and lightning.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. June 7	0	N.NE.	3	K.	9	1863. June 8	0	W.	2	Clear.	0	1863. June 9	0	NW.	2	Clear.	0
	3	NW.	2	C. K.	6		3	W.NW.	3	C.	4		3	NW.	2	Clear.	0
	6	NW.	2	Clear.	6		6	NW.	3	C. K.	4		6	W.	3	C.	1
	9	N. by E.	2	C.	6		9	NW.	4	C.	2		9	W.	3	C.	1
	Noon.	NW.	2	C. K.	6		Noon.	NW.	4	C. K.	4		Noon.	NW.	3	Hazy.	0
	3	NW.	4	C. K.	10		3	NW.	5	C. K.	8		3	W.NW.	3	C.	1
	6	NW.	3	C. K.	7		6	NW.	3	C. K. S.	4		6	W.	3	C.	1
	9	NW.	2	S.	1		9	NW.	2	S.	1		9	W.	1	Clear.	0
June 10	0	W.	2	Clear.	0	June 11	0	SW.	1	C. K.	9	June 12	0	S.	1	C.	3
	3	NW.	2	Clear.	0		3	S.	1	C. K.	9		3	S.SE.	1	C. K.	8
	6	NW.	1	Clear.	0		6	S.	2	N.	10		6	S.	1	C. S.	4
	9	NW.	1	Clear.	0		9	S.	3	C. K. S.	9		9	S.	2	C. K.	9
	Noon.	S.	2	C.	2		Noon.	S. by W.	2	C. K.	10		Noon.	NW.	3	C.	4
	3	S.SW.	2	C. K.	4		3	S.SE.	2	C. K.	9		3	W.	4	C.	4
	6	S.SW.	1	C. K.	10		6	SE.	2	C. K.	7		6	NW.	4	C.	3
	9	SW.	1	C. K.	3		9	S.	Airs.	C. K.	6		9	W.	2	C. S.	3
June 13	0	W.	2	C.	4	June 14	0	NE.	3	K.	10	June 15	0	S.	1	Clear.	0
	3	SW.	1	C. K.	6		3	NE.	1	K.	10		3	S.	1	Clear.	0
	6	W.	2	C. K.	8		6	NE.	1	C. K.	10		6	S.	1	C.	2
	9	W. by N.	1	C.	7		9	NE.	1	K.	10		9	S.SE.	1	Hazy.	
	Noon.	NW.	1	C. K.	9		Noon.	N.	1	K.	10		Noon.	SW.	2	Hazy.	
	3	SE.	1	C. K.	6		3	SE.	1	C.	3		3	SW.	3	Hazy.	
	6	NE.	3	C. K.	6		6	S.	1	Clear.	0		6	S.SW.	2	Clear.	0
	9	NE.	3	K.	10		9	SW.	1	Clear.	0		9	SW.	1	Clear.	0
June 16	0	S.	1	Clear.	0	June 17	0	W.	Airs.	Clear.	0	June 18	0	SE.	1	Clear.	0
	3	W.	1	Hazy.			3	S.	1	Clear.	0		3	SW.	1	Clear.	0
	6	N.	3	C. K.	3		6	SE.	1	Hazy.	0		6	SW.	1	C. K.	7
	9	NE.	2	C.	4		9	S.SE.	2	Hazy.	0		9	W.	1	C. K.	6
	Noon.	NW.	3	Hazy.			Noon.	S.SW.	2	C. K.	2		Noon.	SW.	1	C. K.	4
	3	NW.	3	Hazy.			3	SW.	4	C. K.	3		3	NE.	4	C. K.	9
	6	NE.	1	Hazy.			6	SW.	2	C.	1		6	E.	3	N.	10
	9	N.	1	Clear.	0		9	NW.	1	C.	2		9	SE.	2	N.	10
June 19	0	NW.	2	K.	10	June 20	0	SE.	2	N.	10	June 21	0	SE.	1	K.	10
	3	N.	1	N.	10		3	NE.	1	N.	10		3	SE.	1	K.	10
	6	N.	1	K.	10		6	NE.	1	K.	10		6	SE.	2	K.	10
	9	N.NE.	2	C. K.	10		9	E.	1	K.	10		9	SE.	1	K.	10
	Noon.	NE.	2	C. K.	9		Noon.	E.	1	K.	10		Noon.	S.	Airs.	N.	10
	3	E.NE.	3	C. K.	8		3	E.	2	K.	10		3	S.SW.	1	C. K.	10
	6	E.	3	C. K.	8		6	E.SE.	3	K.	10		6	SW.	1	C. S.	6
	9	E.	1	N.	10		9	SE.	1	K.	10		9	SW.	Airs.	K.	10

REMARKS.

June 11. A light shower of rain at 8. 40 p. m.
13. Thunder at 3. 35 p. m. Sharp lightning, heavy thunder at 3. 50 p. m. Raining at 3. 50 p. m. Amount of rain during the storm, 0. 220 inch.
18. Lightning and thunder at 3. 10 p. m. Considerable hail during the storm about the size of peas. Rain continued, at intervals, until midnight.
19. Raining at 8. 40 p. m. Amount of rain, 0. 270 inch.
20. Light showers, at intervals, during the forenoon. Lightning, thunder, and rain at 11 p. m. Amount, 0. 115 inch.

ıy.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
53. e 22	0	SW.	1	C. K.	4	1863. June 23	0	SW.	1	C. S.	2	1863. June 24	0	NW.	1	C.	2
	3	N.	1	C. K.	6		3	NW.	1	Clear.	0		3	NW.	1	C.	2
	6	NW.	2	Clear.	0		6	SW.	Airs.	C. K.	8		6	W. SW.	1	C. K.	6
	9	W.	3	Clear.	0		9	W.	3	C.	3		9	W.	Airs.	C. K.	8
	Noon.	W. NW.	3	C. K.	4		Noon.	W. by N.	3	C. K.	4		Noon.	W.	1	C. K.	8
	3	W.	4	C. K.	4		3	W. NW.	3	C. K.	7		3	W.	1	C. K.	7
	6	S. SW.	1	C.	1		6	W.	2	C. S.	6		6	SW.	Airs.	C. K.	7
	9	SW.	1	C. K. S.	7		9	W.	1	C.	8		9	SW.	1	C. K.	9
e 25	0	SW.	1	C.	1	June 26	0	E.	1	N.	10	June 27	0	N.	1	K.	10
	3	W.	Airs.	Clear.	0		3	NE.	1	N.	10		3	N.	1	K.	10
	6	S.	Airs.	C.	2		6	NE.	1	K.	10		6	NE.	1	K.	10
	9	S. by E.	1	C. K.	7		9	NE.	1	K.	10		9	NE.	2	K.	10
	Noon.	S.	2	C. K.	10		Noon.	N.	1	N.	10		Noon.	NE.	1	Mist.	10
	3	S. SE.	2	K.	10		3	N. NW.	1	K.	10		3	E. SE.	1	C. K.	10
	6	S.	1	K.	10		6	N.	1	K.	10		6	E.	1	K.	10
	9	S.	Airs.	N.	10		9	NE.		K.	10		9	E.	1	K.	10
e 28	0	SE.	1	C.	4	June 29	0	SE.	2	K.	10	June 30	0	SE.	2	K.	10
	3	E. SE.	1	C. K.	6		3	SE.	1	K.	10		3	SE.	1	K.	10
	6	E. SE.	2	Fog.			6	S.	1	K.	10		6	SE.	2	C. K.	10
	9	E.	1	C. K.	6		9	E.	1	K.	10		9	E.	2	C. K.	10
	Noon.	SE.	2	K	10		Noon.	SE.	2	N.	10		Noon.	E.	2	K.	10
	3	SE.	1	K.	10		3	S. SE.	2	C. K.	9		3	SE.	3	C. K.	9
	6	SE.	1	K.	10		6	SE.	2	C. K.	9		6	SE.	3	C. K.	9
	9	SE.	2	K.	10		9	SE.	1	C. K.	6		9	SE.	1	C. S.	3
r 1	0	SE.	1	K.	10	July 2	0	SE.	2	C. K.	8	July 3	0	S. SE.	1	C. K.	10
	3	E.	1	K.	10		3	SE.	1	K.	10		3	S.	1	C.	1
	6	NE.	1	N.	10		6	S.	1	K.	10		6	SE.	Airs.	K.	10
	9	S. SE.	1	N.	10		9	S.	1	C. K.	4		9	S. by W.	Airs.	K.	10
	Noon.	N.	1	N.	10		Noon.	SW.	1	C. K.	8		Noon.	S. SE.	1	C. K.	6
	3	SE.	2	C. K.	7		3	S. SE.	1	C. K.	8		3	S. SE.	1	C. K.	9
	6	SE.	2	C.	1		6	SE.	2	C. K.	4		6	SE.	1	C.	4
	9	SE.	1	C.	1		9	SE.	1	C. S.	6		9	SE.	2	C.	1
r 4	0	S. SE.	2	C. K.	10	July 5	0	NE.	1	C. K.	10	July 6	0	E.	1	N.	10
	3	SE.	2	C. K.	10		3	SE.	2	K.	10		3	NE.	1	N.	10
	6	S. SE.	1	N.	10		6	SE.	2	K.	10		6	NE.	1	K.	10.
	9	S.	1	K.	9		9	S. SE.	1	N.	10		9	E.	1	N.	10
	Noon.	SE.	1	C.	6		Noon.	S. by E.	1	C. K.	10		Noon.	E.	1	K.	10
	3	SE.	1	C. K.	10		3	S. SE.	1	N.	10		3	E.	1	C. K.	8
	6	N. NE.	1	N.	10		6	NE.	1	N.	10		6	NE.	1	C. K. S.	9
	9	NE.	1	K.	10		9	E.	1	K.	10		9	NE.	1	C. K.	8

REMARKS.

ne 22. Lightning and thunder at midnight.

25. A few drops of rain at intervals until 9 o'clock p. m., and rained steadily from then until midnight. Amount of rain during the afternoon, 0. 106 inch.

29. Raining lightly at 8. 50 a. m. Amount of rain during the shower, 0. 040 inch.

30. Raining lightly at 11. 30 a. m., and again at 2. 30 p. m.

ly 3. Raining at 4 o'clock and 5 minutes p. m. Lightning from 8 until 9 p. m. Amount of rain that fell during the shower, 0. 60 inch.

4. A fine shower at 5 o'clock a. m.; a rainbow in the west at the same time. Raining again at 4 o'clock and 10 minutes p. m., with thunder. Rain during the day, 0. 320 inch.

5. Raining lightly at half past 6 a. m. Lightning from half past 8 until midnight.

6. Raining at midnight. Rain that fell to-day until noon and at intervals yesterday, 0. 920 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weat
		Direction.	Force.					Direction.	Force.					Direction.	Force.	
1863. July 7	0	N. by E.	Airs.	K.	10	1863. July 8	0	NE.	1	K.	10	1863. July 9	0	N. NW.	1	Clear
	3	NE.	1	K.	10		3	E.	1	K.	10		3	NW.	1	Clear
	6	NE.	1	K.	10		6	NE.	1	N.	10		6	NW.	1	C.
	9	NE.	1	K.	10		9	NE.	1	N.	10		9	N.	1	C.
	Noon.	E.	1	K.	10		Noon.	SE.	1	N,	10		Noon.	NW.	2	C. K.
	3	N. by E.	2	C. K.	9		3	N. NW.	2	C. K.	9		3	W. NW.	1	Hazy
	6	E.	1	C. K.	8		6	N. NW.	2	C. K.	9		6	NW.	1	Hazy
	9	E.	1	K.	10		9	N. NW.	1	Clear.	0		9	NW.	1	Hazy
July 10	0	NW.	2	Hazy.		July 11	0	SE.	1	S.	1	July 12	0	SE.	Airs.	K.
	3	NW.	2	Hazy.			3	SE.	1	C. K.	6		3	SE.	Airs.	Hazy
	6	NW.	2	Hazy.			6	SE.	Airs.	K.	10		6	SE.	1	Hazy
	9	N.	2	C. K.	6		9	SE.	Airs.	K.	10		9	SE.	Airs.	K.
	Noon.	N.	1	C. K.	7		Noon.	SE.	1	C.			Noon.	S.	1	K.
	3	SE.	1	C. K.	5		3	SE.	1	C. K.	10		3	NW.	2	K.
	6	SE.	1	C. K. S.	9		6	S.	1	C.	10		6	NE.	1	C. K.
	9	SE.	1	K. S.	3		9	S.	Airs.	K.	10		9	N.	1	K.
July 13	0	NE.	1	K.	10	July 14	0	NW.	1	K.	10	July 15	0	S.	1	K.
	3	NE.	1	N.	10		3	SW.	1	K.	10		3	W.	1	K.
	6	NE.	2	N.	10		6	SW.	1	C. K.	7		6	NW.	1	K.
	9	NE.	1	N.	10		9	S.	1	C. K.	10		9	W. NW.	2	C. K.
	Noon.	NE.	2	N.	10		Noon.	SE.	1	C. K.	9		Noon.	NW.	1	C. K.
	3	N. NE.	2	N.	10		3	SE.	2	C. K.	4		3	W.	1	C. K.
	6	NE.	1	N.	10		6	S. SE.	1	C. K.	10		6	W. NW.	1	C. K.
	9	E.	1	C. K.	9		9	NW.	1	C. K.	10		9	SW.	Airs.	C.
July 16	0	SW.	1	Hazy.		July 17	0	NW.	2	N.	10	July 18	0	NW.	1	Clear
	3	W.	1	Hazy.			3	NW.	1	N.	10		3	N.	1	C. K.
	6	SW.	1	C. K.	7		6	NW.	1	N.	10		6	N. NW.	1	C. K.
	9	W.	1	C. K.	8		9	NW.	3	K.	10		9	NE.	1	C. K.
	Noon.						Noon.	NW.	2	K.	10		Noon.	NE.	1	C. K.
	3	NW.	1	K.	10		3	NW.	2	K.	10		3	E.	1	C.
	6	NW.	1	K.	10		6	N.	1	K.	10		6	N. NE.	1	C.
	9	N. NE.	3	N.	10		9	NW.	1	K.	10		9	N.	1	S.
July 19	0	NW.	1	Clear.	0	July 20	0	N.	1	Clear.	0	July 21	0	SE.	3	C. S.
	3	NW.	1	C.	4		3	NW.	1	Clear.	0		3	S.	3	K.
	6	NW.	1	C.	3		6	N. NW.	1	C.	6		6	S.	2	C. K.
	9	N. NE.	1	C. K.	7		9	E.	1	C.	2		9	N. NW.	2	C. K.
	Noon.	S.	1	C. K.	5		Noon.	SE.	2	C. K.	6		Noon.	NW.	2	C. K.
	3	S. SE.	1	C. K.	6		3	SE.	3	C.	2		3	NW.	2	C. K.
	6	E.	1	C.	3		6	S. SE.	3	C.	5		6	N.	2	C.
	9	E.	Airs.	S.	1		9	SE.	3	C. S.	2		9	N. NW.	2	Clear

REMARKS.

July 7. Raining at 5, at 15 minutes past 5, at 6, and at 7 p. m. Amount that fell during the showers, 0. 060 inch.
10. Lightning in the SE. at 9 p. m., and afterwards.
12. Thunder at 1, 2, 3, and 4. Lightning, thunder, and rain, at 3. 30 p. m.; a SE. storm. Rain during the day, 0. 800 inch.
13. Lightning at midnight. Rain, lightning, and thunder, at 2. 30 a. m., and continued during the morning. Amount of rain during 1. 800 inch.
14. Lightning and thunder at 7 p. m. Raining at 7. 10. Amount of rain during the storm, 0. 235 inch.
16. Lightning, thunder, and rain, at 8 o'clock p. m. Amount of rain during the storm, 0. 920 inch.
17. Lightning and thunder during the night. A light shower of rain at 1 o'clock p. m. Amount of rain that fell at 9 o'clock a. m., 0. 250
20. Shooting stars from NW. at intervals during the evening.
21. A light shower of rain at 3. 30 a. m.

ay.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
63. ly 22	0	NW.	1	Clear.	0	1863. July 23	0	NW.	1	Clear.	0	1863. July 24	0	SE.	1	C. K.	6
	3	NW.	2	Clear.	0		3	NW.	1	Clear.	0		3	S.	1	C. K.	4
	6	N.	1	Clear.	0		6	NW.	1	C.	3		6	NE.	1	C. K.	9
	9	N. NE.	2	Clear.	0		9	S. by W.	1	C. K.	2		9	S.	1	K.	10
	Noon.	E. NE.	1	Clear.	0		Noon.	S. SW.	1	C. K.	7		Noon.	SE.	1	C. K.	6
	3	N. NE.	1	Clear.	0		3	S. by E.	1	C. K.	6		3	SE.	1	C.	2
	6	NE.	2	C.	2		6	S. by E.	1	C. K.	9		6	S.	1	C.	3
	9	N. by E.	1	Clear.	2		9	SE.	1	C. K.	7		9	S.	1	C.	2
ly 25	0	S.	1	C.	2	July 26	0	NW.	1	N.	10	July 27	0	S.	1	C. K.	4
	3	S.	Airs.	S.	2		3	NW.	1	C. K.	6		3	S.	1	C.	6
	6	S.	Airs.	C. S.	6		6	S.	1	C. K.	8		6	S.	Airs.	C. S.	8
	9	S.	2	C. K.	10		9	SW.	1	C.	2		9	S. SE.	1	C. K.	10
	Noon.	S. by W.	3	C. K.	10		Noon.	S. by W.	1	C.	4		Noon.	S. SW.	1	C. N.	10
	3	S. SE.	3	C. K.	7		3	S.	1	C. K.	4		3	NW.	1	C. K. S.	10
	6	S.	2	C. K.	8		6	S.	1	C. K.	7		6	SW.	Airs.	K.	10
	9	W.	1	K.	10		9	NW.	1	C. K.	6		9	S.	1	K.	8
ly 28	0	S.	1	K.	10	July 29	0	SE.	1	N.	10	July 30	0	S.	1	K.	10
	3	S. SW.	1	K. S.	4		3	SW.	1	K.	10		3	S.	1	C. K.	10
	6	W.	1	C. K.	7		6	S.	1	C. S.	4		6	S. SE.	3	N.	10
	9	S.	1	C. K.	9		9	S.	1	C. K.	10		9	S.	3	C. K.	7
	Noon.	S. by E.	1	C. K.	7		Noon.	S.	1	N.	10		Noon.	S.	3	C. K.	6
	3	SE.	1	C. K.	8		3	S.	3	C. K.	10		3	S.	5	C. K.	7
	6	SE.	2	C. K.	9		6	S.	5	N.	10		6	S.	3	C. K.	4
	9	SW.	1	N.	10		9	S.	1	C. K.	8		9	S.	2	C. N.	10
ly 31	0	SE.	4	C. K.	10												
	3	S.	3	K.	10												
	6	SE.	2	K.	10												
	9	S.	1	N.	10												
	Noon.	S. SE.	2	C. K.	9												
	3	S. by E.	2	C. K.	7												
	6	S.	1	Clear.	0												
	9	S.	Airs.	Clear.	0												
g. 1	0	SW.	Airs.	C.	3	Aug. 2	0	S.	Airs.	Clear.	0	Aug. 3	0	S.	1	C.	3
	3	S.	1	C. K.	6		3	S.	Airs.	Clear.	0		3	S.	1	C.	4
	6	S.	1	C. K.	7		6	S.	Airs.	Clear.	0		6	SW.	1	Clear.	0
	9	S.	1	C.	4		9	S. by E.	1	Hazy.	0		9	W.	1	Clear.	0
	Noon.	S.	1	C.	2		Noon.	W. NW.	1	C. K.	2		Noon.	E.	1	Clear.	0
	3	S. SE.	2	C.	4		3	SE.	1	C. K.	3		3	SE.	1	K.	2
	6	S. by E.	1	C.	2		6	SW.	1	C. K.	3		6	S.	1	C. K.	3
	9	S.	Airs.	C. K.	8		9	S.	Airs.	Clear.	0		9	NW.	2	K.	4

REMARKS.

uly 25. Lightning and thunder during the evening. Commenced to rain at 10. 30 p. m. Amount of rain during the storm, 0. 410 inch.
26. Thunder at 6. 30 p. m. Lightning and thunder at 7 p. m. Lightning, thunder, and light shower of rain at 8. 20 p. m. Rainbow at 6 p. m. in the east.
27. Thunder from noon until 1. 40 p. m. Rainbow in the SE. at 7 p. m.
28. Lightning, thunder and rain at 7.25 p. m. Rain during the storm, 0. 260 inch.
29. Raining lightly at 9 a. m., and continued in moderate showers until noon.
30. Rain during the morning, 0. 540 inch.
ugust 3. Lightning and thunder from 7 p. m. until midnight.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Aug. 4	0	NW.	1	C. K.	9	1863. Aug. 5	0	S.	1	C. K.	4	1863. Aug. 6	0	SW.	1	C. K.	7
	3	W.	1	C. K.	7		3	SE.	1	C. K.	2		3	W.	1	C. S.	4
	6	W.	1	C. S.	4		6	NE.	1	C. K.	4		6	W. SW.	Airs.	S.	1
	9	N. NW.	1	C. K.	8		9	S.	1	C. K.	4		9	NW.	3	C. S.	3
	Noon.	S.	1	C. K.	2		Noon.	S. SE.	1	C. K.	4		Noon.	W.	3	C. K.	7
	3	S. SE.	2	C. K.	6		3	S.	1	C.	2		3	W. NW.	3	C. K.	9
	6	W.	1	K.	10		6	S.	1	C. K.	7		6	SW.	1	C. S.	5
	9	NW.	1	K.	10		9	S.	1	C. K.	9		9	W.	1	C.	4
Aug. 7	0	W.	Airs.	Clear.	0	Aug. 8	0	SE.	1	C. K.	6	Aug. 9	0	SW.	1	Clear.	0
	3	W. NW.	1	C. K.	6		3	S.	1	K.	10		3	SW.	1	Clear.	0
	6	W.	1	C.	4		6	S.	1	K.	10		6	S. SW.	Airs.	Clear.	0
	9	E.	1	C.	4		9	S. by W.	1	C. K.	3		9	SW.	Airs.	Clear.	0
	Noon.	SE.	1	C.	3		Noon.	SW.	2	C. K.	4		Noon.	W.	1	C.	4
	3	S. SE.	1	C. K.	4		3	SW.	2	C. K.	6		3	S.	1	C.	4
	6	S. SE.	1	C. K.	8		6	SW.	2	C. K.	8		6	S. SW.	1	C. K.	2
	9	SE.	1	K.	10		9	SW.	2	S.	2		9	SW.	1	Clear.	0
Aug. 10	0	SW.	1	Clear.	0	Aug. 11	0	Calm.	0	Clear.	0	Aug. 12	0	SE.	1	C. K.	5
	3	W.	Airs.	C.	2		3	SW.	0	Clear.	0		3	SW.	1	C.	3
	6	W.	1	C.	3		6	S. SE.	1	Clear.	0		6	W.	2	S.	1
	9	W.	2	C. K.	2		9	W.	Airs.	C.	1		9	N.	3	C. S.	2
	Noon.	NW.	2	C. K.	1		Noon.	S.	2	C.	2		Noon.	N. by E.	2	C. K.	4
	3	SW.	1	C. K.	2		3	S. SW.	2	C. K.	4		3	NW.	2	C. K.	4
	6	S.	1	S.	1		6	S. by W.	2	C. K.	3		6	N.	2	C. K.	7
	9	Calm.	0	S.	1		9	S.	1	S.	1		9	N.	2	C. K.	7
Aug. 13	0	N.	2	C. K.	6	Aug. 14	0	SE.	1	C. K.	4	Aug. 15	0	NW.	1	Clear.	0
	3	N.	1	N.	10		3	NE.	1	C. K.	7		3	NW.	1	Clear.	0
	6	N.NE.	2	N.	10		6	NE.	1	K.	10		6	W.	1	C.	2
	9	NE.	2	N.	10		9	S.SW.	1	Clear.	0		9	W.NW.	1	Hazy.	
	Noon.	N.	3	K.	10		Noon.	S.	2	C. K.	3		Noon.	N.	1	C.	2
	3	NE.	2	C. K.	8		3	S.	1	C. K.	4		3	N.	1	Clear.	0
	6	NE.	1	C. K.	8		6	SW.	Airs.	C. K.	9		6	N. by W.	1	Hazy.	
	9	SE.	1	C. K.	10		9	NW.	1	C.	2		9	W.	1	C.	1
Aug. 16	0	SW.	Airs.	Clear.	0	Aug. 17	0	W.	1	C.	2	Aug. 18	0	N.NE.	2	C. S.	2
	3	W.	Airs.	Clear.	0		3	W.	1	C.	1		3	N.	1	C.	1
	6	W.	Airs.	C.			6	N.	1	C. K.	7		6	N.	1	Clear.	0
	9	SE.	Airs.	Hazy.			9	N.	1	C. K.	9		9	NE.	2	Hazy.	
	Noon.	S.	1	Hazy.			Noon.	N.	1	C. K.	5		Noon	NW.	2	C. K.	1
	3	S.	2	C. K.	5		3	N.	2	C. S.	2		3	NW.	3	C. S.	1
	6	S.	1	C. K. S.	9		6	N.NE.	2	C. K.	7		6	NE.	2	C.	1
	9	NW.	2	C.	8		9	N.NE.	2	C. S.	2		9	N.	1	Clear.	0

REMARKS.

August 4. Thundering at 3. 30 p. m.
5. Lightning and thunder during the evening.
7. Lightning, thunder and a moderate shower at 10 p. m. Rain, 0. 040 inch.
8. Shooting stars in the W. at 2 a. m.
9. Lightning in the N. and E. during the latter part of the day. Numerous small meteors from the N. and NE.
10. Lightning in the NE. during the early part of the night until 10 p. m. Many shooting stars during the first part of the night.
11. Numerous shooting stars during the night; sometimes as many as ten appeared in twenty-five seconds.
12. Shooting stars during the night. Intense lightning during the early part of the night in the NW., N. and NE., with a few distant thunder peals at 10.30 p. m.
13. Intense lightning during the night, veering around to all points of the horizon. Commenced to rain at 2. 50 a. m, with continual lightning and thunder. Rain, 0. 520 inch.
14. A few faint shooting stars in the early part of the night.
16. Lightning in the E. during the early part of the night.
17. Lightning at midnight.

ay.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
63. g. 19	0	N.	Airs.	Clear.	0	1863. Aug. 20	0	W.	1	Clear.	0	1863. Aug. 21	0	Calm.	0	Clear.	0
	3	NW.	Airs.	Fog.			3	Calm.	0	Clear.	0		3	W.	Airs.	Hazy.	
	6	W.	Airs.	Fog.			6	W.SW.	1	Clear.	0		6	NW.	Airs.	C.	8
	9	W.	Airs.	Clear.	0		9	S.SE.	Airs.	C.	6		9	S.	Airs.	Clear.	0
	Noon.	SW.	1	C. K.	2		Noon.	SE.	1	C.	4		Noon.	S.SW.	Airs.	Hazy.	0
	3	S.SE.	1	Clear.	0		3	S.	1	Clear.	0		3	N.NE.	1	Hazy.	0
	6	S.	1	Clear.	0		6	S.	0	Clear.	0		6	SE.	Airs.	C. K. S.	6
	9	W.	Airs.	Clear.	0		9	Calm.	0	Clear.	0		9	W.	1	C. K. S.	4
g. 22	0	SW.	1	C. K.	4	Aug. 23	0	S.	Airs.	C. K.	9	Aug. 24	0	S.	1	C.	3
	3	W.	1	C.	2		3	SW.	Airs.	C. S.	2		3	S.	2	C.	2
	6	W.	1	S.	4		6	SW.	Airs.	Hazy.			6	S.	2	C.	4
	9	W.	2	C. S.	2		9	S.	Airs.	C.	1		9	S.	3	C. K.	6
	Noon.	W.NW.	2	C.	1		Noon.	W.	Airs.	C.	1		Noon.	S.	3	C. K.	4
	3	SW.	1	C. K.	3		3	S.SE.	1	C.	3		3	S.	3	C. K.	3
	6	S.SW.	Airs.	C. S.	3		6	S.	1	C. K.	2		6	S.	2	C. K.	8
	9	SW.	Airs.	C. K.	4		9	S. by E.	1	C.	4		9	S.	1	Clear.	0
g. 25	0	S.	2	C.	2	Aug. 26	0	NW.	4	N.	10	Aug. 27	0	NW.	1	C.	2
	3	S.	2	S.	1		3	NW.	4	K.	10		3	NW.	1	C. S.	3
	6	S.	2	C. K.	7		6	W.NW.	3	C. K. S.	9		6	N.NW.	1	C. K.	8
	9	S.	2	C. K.	6		9	NW.	4	C. K. S.	8		9	NE.	1	C. K. S.	7
	Noon.	S.	1	C. K.	9		Noon.	NW.	4	C. K. S.	7		Noon.	NE.	1	C. K.	5
	3	S.SW.	1	N.	10		3	NW.	3	C. K. S.	4		3	N.	1	C.	2
	6	S.SE.	3	C. K.	9		6	N.	2	C. S.	6		6	E. by S.	1	C. S.	2
	9	NW.	3	N.	10		9	N.	1	N.	4		9	NE.	1	Clear.	0
g. 28	0	N. by W.	1	C. K.	8	Aug. 29	0	S.	2	C.	2	Aug. 30	0	W.NW.	3	C. K.	4
	3	NW.	1	C. K.	10		3	S.	1	Clear.	0		3	W.NW.	1	C.	6
	6	NW.	1	C. S.	6		6	S.	2	C. K.	6		6	W.NW.	1	Clear.	0
	9	SE.	1	C. K.	6		9	S.	1	K.	10		9	NW.	3	Clear.	0
	Noon.	SE.	1	Hazy.			Noon.	S.	1	C. K.	8		Noon.	W.NW.	2	C. S.	1
	3	S.SW.	1	C. S.			3	S.	2	C.	2		3	W.	1	C. K.	1
	6	SW.	1	C.	2		6	W.NW.	3	C. K. S.	7		6	NW.	1	C.	1
	9	S.	1	Clear.	0		9	W.NW.	3	C. K.	8		9	NW.	1	Clear.	0
g. 31	0	NW.	1	Clear.	0												
	3	NW.	1	Clear.	0												
	6	NW.	1	Clear.	0												
	9	N. NE.	1	C.	1												
	Noon.	N.	1	C. K.	4												
	3	NE.	1	C. K.	7												
	6	NE.	1	C. S.	3												
	9	N. NW.	1	S.	1												

REMARKS.

August 21. Lightning in the N. and W. during the early part of the night.
22. Lightning in the west at 12 and 2 a. m. Lightning at 9 p. m.
23. Lightning in the south at midnight. A few drops of rain at 0. 35 a. m.
25. Commenced raining at 2 o'clock and 45 minutes p. m. Rain during the day, 0. 550 inch.
29. Raining lightly at intervals during the forenoon. A moderate shower at 5 p. m. Rain, 0. 160 inch.

Day.	Hour.	Wind.		Weather.	Portion cloudy.	Day.	Hour.	Wind.		Weather.	Portion cloudy.	Day.	Hour.	Wind.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Sept. 1	0	W. NW.	Airs.	C.	3	1863. Sept. 2	0	N.	Airs.	Clear.	0	1863. Sept. 3	0	SW.	1	Clear.	0
	3	NW.	1	C.	4		3	N. NW.	1	C. K.	8		3	NW.	Airs.	Clear.	0
	6	NW.	1	C.	2		6	NE.	1	K.	10		6	W.	Airs.	Fog.	
	9	E. by S.	2	C. K.	3		9	NE.	1	K.	10		9	N. by E.	Airs.	Hazy.	
	Noon.	N. NW.	2	C. K.	6		Noon.	SW.	1	C.	4		Noon.	S. SE.	1	C. K.	3
	3	N. NE.	1	C. K.	8		3	E.	1	C.	3		3	N. by W.	1	Hazy.	
	6	E.	1	C.	3		6	E. SE.	1	C. K.	3		6	E. NE.	Airs.	C. S.	3
	9	NW.	1	Clear.	0		9	E. SE.	1	C. S.	2		9	NW.	1	Clear.	0
Sept. 4	0	NW.	1	C. K.	10	Sept. 5	0	N. by W.	1	Clear.	0	Sept. 6	0	S.	1	Clear.	0
	3	N. NW.	1	C. K.	8		3	W. NW.	1	Clear.	0		3	SW.	Airs.	Clear.	0
	6	NW.	2	C. K.	8		6	W. NW.	1	Clear.	0		6	S.	1	Hazy.	
	9	NW.	2	K.	10		9	S. by W.	1	Hazy.			9	SE.	1	C.	3
	Noon.	W.	1	Clear.	0		Noon.	S. SE.	1	Hazy.			Noon.	SE.	1	C.	4
	3	N. by E.	1	Clear.	0		3	SE.	1	C.	1		3	SE.	2	C. K.	4
	6	N. by W.	1	Clear.	0		6	S.	1	Clear.	0		6	SE.	1	C. K. S.	9
	9	N. NW.	1	Clear.	0		9	S.	Airs.	Clear.	0		9	S.	1	C. S.	2
Sept. 7	0	W.	1	S.	1	Sept. 8	0	Calm.	0	Clear.	0	Sept. 9	0	S.	Airs.	C. K.	8
	3	NW.	Airs.	C.	2		3	E.	Airs.	C. K.	6		3	SW.	Airs.	C. K.	7
	6	NW.	Airs.	C. S.	3		6	E.	Airs.	K.	10		6	W.	Airs.	C. K.	7
	9	NE.	1	C. K.	3		9	S.	1	C. K.	8		9	W. by N.	1	C. K.	6
	Noon.	E.	1	C. K.	7		Noon.	NW.	1	C. K.	6		Noon.	W.	1	C. K.	10
	3	S.	1	C. K.	3		3	S.	1	C. K.	8		3	N. NW.	2	C. K.	10
	6	SE.	1	C.	1		6	S.	1	C. K. S.	6		6	N.	1	C. K.	8
	9	SE.	1	Clear.	0		9	S.	1	C.	2		9	NW.	1	Clear.	0
Sept. 10	0	N.	2	Clear.	0	Sept. 11	0	E.	1	K.	10	Sept. 12	0	S.	1	Clear.	0
	3	N.	Airs.	K.	10		3	NE.	1	K.	10		3	S. SW.	1	C. K.	3
	6	N. by E.	2	C. K.	9		6	NE.	1	K.	10		6	S. by W.	1	C. K.	4
	9	NE.	1	C. K.	4		9	SE.	1	K.	10		9	SE.	1	C. K.	6
	Noon.	E.	1	K.	10		Noon.	S. SE.	1	C. K.	9		Noon.	SE.	1	C. K.	4
	3	E.	1	K.	10		3	S. by W.	1	C. K.	4		3	S.	1	C. K.	4
	6	E.	1	K.	10		6	S.	1	C. K.	10		6	S. SE.	1	C. K.	9
	9	SE.	2	C. K.	5		9	Calm.	0	C. K.	4		9	W.	2	C. K.	6
Sept. 13	0	NW.	1	Clear.	0	Sept. 14	0	NE.	1	K.	10	Sept. 15	0	E.	1	K.	10
	3	NW.	1	C.	2		3	N. NE.	2	K.	10		3	E.	1	K.	10
	6	W.	1	N.	10		6	N. by E.	2	Mist.	10		6	E.	1	K.	10
	9	NW.	1	C. K.	9		9	NE.	1	K.	10		9	E. by S.	1	C. K.	6
	Noon.	NE.	1	C. K.	9		Noon.	NE.	1	K.	10		Noon.	S.	1	C. K.	4
	3	N. NE.	1	C. K.	9		3	NE.	1	C. K.	5		3	S. SE.	1	C. K.	3
	6	NE.	1	C. K.	10		6	NE.	1	C. K.	4		6	SE.	1	C. S.	2
	9	N.	1	K.	10		9	NE.	1	C. K.	4		9	SE.	1	Clear.	0

REMARKS.

September 6. A fine shower of rain at 5 p. m., with lightning and thunder. Rain during shower, 0. 080 inch.
7. Lightning in the east at midnight.
9. A light shower of rain at noon.
12. Thundering at 2 o'clock and 45 minutes p. m. Amount of rain during the storm, 0. 160 inch.
13. Lightning during the night. Thundering at 4 a. m. and raining at 5.35, with thunder in the west. Amount of rain during the morning, gauged at 8 a. m., 0. 380 inch.
14. Zodiacal light brilliant until 8 o'clock p. m.

ay.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
363. pt. 16	0	S.	Airs.	Clear.	0	1863. Sept. 17	0	S.	1	C.	2	1863. Sept. 18	0	NE.	1	N.	10
	3	S. by E.	1	C. K.	6		3	E.	Airs.	C. K.	8		3	E.	1	K.	10
	6	S. SE.	1	K.	10		6	E.	Airs.	K.	10		6	NE.	1	K.	10
	9	S.	Airs.	K.	10		9	SE.	Airs.	K.	10		9	E.SE.	1	N.	10
	Noon.	SE.	1	C. K.	7		Noon.	SE.	1	C. K.	9		Noon.	W.NW.	3	N.	10
	3	SE.	1	C. K.	6		3	S.	2	C. K.	10		3	W.	4	C. K.	7
	6	SE.	1	C. S.	2		6	SE.	1	C. S.	4		6	NW.	3	C. K. S.	6
	9	S.	1	S.	1		9	SE.	1	C. K.	8		9	NW.	2	C. K. S.	6
pt. 19	0	W.NW.	2	C. K. S.	6	Sept. 20	0	NW.	2	K.	10	Sept. 21	0	NW.	2	Clear.	0
	3	NW.	1	C. K.	6		3	NW.	2	K.	10		3	W.	1	Clear.	0
	6	NW.	1	N.	10		6	NW.	2	C. K. S.	8		6	W.	1	Clear.	0
	9	N.NW.	2	C. K. S.	10		9	NW.	3	C.	4		9	S.SW.	2	Clear.	0
	Noon.	NE.	2	C. K.	10		Noon.	NW.	2	C. K.	8		Noon.	SW.	2	Clear.	0
	3	N. by E.	1	C. K.	9		3	NW.	2	C. K.	9		3	SW.	2	Clear.	0
	6	NW.	1	K.	10		6	NW.	2	S.	1		6	SW.	1	Clear.	0
	9	NW.	2	K.	10		9	NW.	1	Clear.	0		9	SW.	1	Clear.	0
pt. 22	0	NE.	2	C. K.	3	Sept. 23	0	NW.	Airs.	Clear.	0	Aug. 24	0	W.	Airs.	Clear.	0
	3	NW.	3	S.	1		3	NW.	Airs.	Clear.	0		3	SW.	Airs.	Hazy.	0
	6	NW.	2	S,	1		6	NW.	1	S.	1		6	SW.	Airs.	Hazy.	
	9	NW.	2	Clear.	0		9	SE.	1	Hazy.			9	S.	Airs.	Hazy.	
	Noon.	N.NW.	2	Clear.	0		Noon.	S. by E.	1	C. K.	3		Noon.	SE.	1	C. S.	2
	3	NW.	2	Clear.	0		3	S.SE.	1	Clear.	0		3	S.	1	C.	1
	6	NW.	Airs.	Clear.	0		6	SE.	1	C. S.	1		6	S.SE.	Airs.	C. S.	2
	9	NW.	Airs.	Clear.	0		9	SW.	1	Clear.	0		9	S.	Airs.	Clear.	0
pt. 25	0	S.	Airs.	C. S.	2	Sept. 26	0	N. by W.	2	C. S.	2	Sept. 27	0	NW.	Airs.	Clear.	0
	3	SW.	Airs.	Clear.	0		3	NW.	2	C. K.	2		3	NW.	1	Clear.	0
	6	W.		Fog.			6	NW.	3	S.	1		6	NW.	1	Clear.	0
	9	W.	Airs.	C. K.	10		9	NW.	3	Clear.	0		9	N. by W.	1	Clear.	0
	Noon.	N.	3	C. K.	9		Noon.	N.	3	Clear.	0		Noon.	NW.	1	Clear.	0
	3	N.NW.	2	C. K.	4		3	N.	3	Clear.	0		3	SW.	2	Clear.	0
	6	NW.	1	C. S.	3		6	N.NW.	1	Clear.	0		6	W.	1	Clear.	0
	9	NW.	2	C. S.	3		9	NW.	1	Clear.	0		9	W.	Airs.	Clear.	0
pt. 28	0	NW.	Airs.	Clear.	0	Sept. 29	0	NW.	1	S.	1	Sept. 30	0	NE.	1	C.	2
	3	W.	1	Clear.	0		3	W.	Airs.	Clear.	0		3	W.NW.	1	Clear.	0
	6	W.	1	Clear.	0		6	W.	Airs.	Fog.			6	W.	Airs.	Fog.	
	9	W.	Airs.	Clear.	0		9	W.	Airs.	Hazy.			9	N.NW.	Airs.	Fog.	
	Noon.	S.	1	Clear.	0		Noon.	S.	1	Hazy.			Noon.	SE.	1	C. K.	5
	3	SE.	1	Clear.	0		3	SE.	1	Hazy.			3	SE.	1	C.	1
	6	E.SE.	1	C. S.	2		6	E.SE.	1	Clear.	0		6	E.SE.	1	C. S.	2
	9	NE.	Airs.	Clear.	0		9	Calm.	0	Clear.	0		9	S.	1	Clear.	0

REMARKS.

September 17. A beautiful shower of rain between 11 and 12 o'clock a. m. Amount of rain, 0. 060 inch.
18. Raining at midnight. Amount gauged at 1 o'clock p. m., 1.900 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Oct. 1	0	E.SE.	1	C. K.	6	1863. Oct. 2	0	E.	1	K.	10	1863. Oct. 3	0	SW.	6	K.	10
	3	N.	Airs.	C.	1		3	E.	1	K.	10		3	W.	4	C. K.	6
	6	NW.	Airs.	Fog.			6	E.	1	N.	10		6	W.NW.	2	Clear.	0
	9	W.SW.	Airs.	Fog.			9	E.NE.	2	K.	10		9	W.NW.	3	Clear.	0
	Noon.	SE.	1	C. K.	9		Noon.	E.	3	N.	10		Noon.	W.SW.	2	Clear.	0
	3	S.SE.	1	C. K.	10		3	E.	5	N.	10		3	E.SE.	1	C. K.	5
	6	E.	1	K.	10		6	E.SE.	1	N.	10		6	SE.	Airs.	C. S.	8
	9	E.	1	K.	10		9	NW.	4	N.	10		9	SE.	1	C. S.	6
Oct. 4	0	S.SE.	Airs.	C.	3	Oct. 5	0	NW.	2	C. K.	6	Oct. 6	0	NW.	2	C. S.	2
	3	SW.	1	C.	2		3	NW.	1	Clear.	0		3	W.	1	C. K.	4
	6	W.	1	C. K.	6		6	NW.	1	Clear.	0		6	W.NW.	1	Clear.	0
	9	NW.	1	C. K.	8		9	W.	3	C. K.	3		9	W.	1	K.	10
	Noon.	W.	2	C.	4		Noon.	W. by N.	3	C. K. S.	2		Noon.	S.	1	C.	3
	3	NW.	1	C. K.	9		3	W.SW.	2	C. K.	4		3	SE.	1	C. K.	7
	6	NW.	1	C. K.	8		6	NW.	1	Clear.	0		6	E.SE.	1	C. S.	3
	9	NW.	1	C. K.	7		9	NW.	1	S.	1		9	SE.	1	C. K.	7
Oct. 7	0	W.	1	C.	3	Oct. 8	0	E.	1	N.	10	Oct. 9	0	NW.	2	Clear.	0
	3	W.	1	K.	10		3	S.	1	K.	10		3	NW.	1	Clear.	0
	6	NE.	1	K.	10		6	W.SW.	1	K.	10		6	NW.	1	Fog.	
	9	SE.	2	C. K.	10		9	W.	3	N.	10		9	S.SE.	1	Clear.	0
	Noon.	E.SE.	3	C. K.	10		Noon.	NW.	1	N.	10		Noon.	S.	2	C. K.	2
	3	SE.	2	C. K.	10		3	W.NW.	2	C. S.	3		3	S.SW.	2	C.	1
	6	E.	1	C. K.	10		6	W. by N.	1	C. S.	4		6	S.SE.	1	S.	1
	9	E.	1	C. K.	10		9	NW.	2	Clear.	0		9	W.	1	C. S.	2
Oct. 10	0	NW.	1	C.	3	Oct. 11	0	NW.	2	C. S.	2	Oct. 12	0	NW.	1	Clear.	0
	3	NW.	1	C. K.	6		3	NW.	3	Clear.	0		3	NW.	1	Clear.	0
	6	NW.	1	C. K.	8		6	NW.	2	Clear.	0		6	NW.	1	Clear.	0
	9	N.NE.	1	C. K.	9		9	NW.	2	C.	1		9	N.NW.	1	Clear.	0
	Noon.	NW.	1	C. K.	9		Noon.	NW.	2	C. K.	3		Noon.	SW.	1	C.	1
	3	N.NW.	Airs.	C. K.	7		3	N.	2	C. K.	3		3	W.	Airs.	Clear.	0
	6	NW.	2	C. K. S.	9		6	N.NW.	1	S.	1		6	SW.	Airs.	C. S.	2
	9	NW.	1	C. K.	9		9	NW.	1	Clear.	0		9	W.	1	Clear.	0
Oct. 13	0	W.	Airs.	S.	1	Oct. 14	0	NW.	Airs.	Clear.	0	Oct. 15	0	NE.	Airs.	C. S.	3
	3	NW.	Airs.	C.	6		3	NW.	1	C. S.	2		3	N.	Airs.	K.	10
	6	NW.	Airs.	C. K.	9		6	NW.	1	C. K.	9		6	N.	Airs.	K.	10
	9	NE.	Airs.	C. K.	8		9	N. NW.	1	C. K.	10		9	NE.	Airs.	K.	10
	Noon.	SE.	1	C. K.	7		Noon.	S. SE.	Airs.	C.	10		Noon.	E. SE.	Airs.	N.	10
	3	SE.	Airs.	K.	7		3	W. SW.	Airs.	C. K.	10		3	NE.	1	N.	10
	6	E.	1	C.	4		6	NE.	Airs.	C. K. S.	9		6	NE.	1	N.	10
	9	N.	1	C.	2		9	NE.	Airs.	C. S.			9	NE.	1	N.	10

REMARKS.

October 2. A few drops of rain at midnight. Commenced to rain at 5. 30 p. m. At 8. 30 p. m. the wind changed to the NW., blowing a fresh gale, with heavy rain. Rain during the day, 1. 656 inch.
7. Commenced raining at 9 o'clock and 40 minutes p. m. Rain during the shower, 0. 100 inch.
8. Showery until noon. Rain during the day, 0. 150 inch.
10. A few drops of rain at 5. 30 p. m.
11. Shooting stars at intervals in the west during the early part of the night.
15. Rain during the day, 0. 150 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Oct. 16	0	E.	1	K.	10	1863. Oct. 17	0	SE.	2	C. S.	2	1863. Oct. 18	0	Calm.	0	Clear.	0
	3	E. NE.	1	K.	10		3	SE.	1	Clear.	0		3	S. SW.	Airs.	C. S.	3
	6	E.	1	K.	10		6	SE.	1	C. S.	4		6	S.	Airs.	C. K.	4
	9	E.	1	K.	10		9	SW.	1	C.	1		9	S.	2	C.	6
	Noon.	E. SE.	1	N.	10		Noon.	SE.	1	Clear.	0		Noon.	S. SE.	3	S.	2
	3	E. SE.	2	N.	10		3	SE.	1	Clear.	1		3	S. SE.	3	C.	2
	6	E. by S.	3	C. K.	9		6	SE.	Airs.	S.	1		6	S. SE.	1	C. S.	2
	9	S. SW.	1	C. K.	8		9	SW.	Airs.	Clear.	0		9	S. SE.	1	C. K. S.	7
Oct. 19	0	SE.	1	C. K.	7	Oct. 20	0	W.	2	S.	1	Oct. 21	0	SE.	Airs.	Clear.	0
	3	SW.	2	C. K.	6		3	W.	1	Clear.	0		3	W.	Airs.	Clear.	0
	6	W.	8	N.	10		6	W.	2	C. S.	2		6	W.	Airs.	Clear.	0
	9	N. NE.	2	N.	10		9	W.	1	C.	3		9	SE.	Airs.	Clear.	0
	Noon.	W. NW.	2	C. K. S.	7		Noon.	S. SE.	Airs.	Clear.	0		Noon.	W.	2	C. K.	2
	3	W.	2	C. K.	6		3	S. SW.	Airs.	Clear.	0		3	W. NW.	1	C. K.	3
	6	W.	1	S.	1		6	S. by W.	Airs.	Clear.	0		6	NW.	1	C. S.	2
	9	W.	1	Clear.	0		9	S. SE.	Airs.	Clear.	0		9	N.	1	C. K.	7
Oct. 22	0	NW.	1	K.	10	Oct. 23	0	W.	1	C.	3	Oct. 24	0	N. by W.	1	N.	10
	3	NW.	2	C. K.	2		3	NW.	1	K.	10		3	N.	2	N.	10
	6	N. NW.	1	C. K. S.	7		6	NE.	1	C. K.	8		6	NW.	2	C. K.	10
	9	N. NW.	1	C.	2		9	E. SE.	1	C. K.	9		9	N. NW.	1	N.	10
	Noon.	N. NW.	1	C.	3		Noon.	SE.	2	C. K.	4		Noon.	NW.	1	N.	10
	3	SE.	1	Hazy.			3	S. by E.	1	C. K.	10		3	NW.	1	N.	10
	6	E. SE.	1	Hazy.			6	NE.	1	K.	10		6	NW.	2	N.	10
	9	SE.	1	Clear.	0		9	NW.	2	K.	10		9	NW.	1	K.	10
Oct. 25	0	N. NW.	2	C. K.	9	Oct. 26	0	N. NW.	1	K.	10	Oct. 27	0	NW.	1	C. S.	1
	3	NW.	1	C.	6		3	N. NW.	2	C. K.	9		3	NW.	1	C. S.	6
	6	NW.	2	C.	4		6	N. NW.	2	C. K. S.	4		6	NW.	1	C. S.	3
	9	N. NW.	2	S.	1		9	NE.	2	C. S.	2		9	N. NW.	2	C. S.	2
	Noon.	N.	3	C. K.	6		Noon.	SE.	1	C. S.	4		Noon.	N.	2	C. K.	4
	3	N. NE.	3	C. K.	6		3	N.	2	C. S.	4		3	N. NW.	1	C. K.	10
	6	N.	1	K.	9		6	NW.	2	C. S.	2		6	NW.	1	C. S.	2
	9	N.	1	K.	10		9	N. NW.	2	C. S.	2		9	NW.	2	C. K.	3
Oct. 28	0	NW.	2	C.	1	Oct. 29	0	NW.	1	C.	4	Oct. 30	0	N.	1	Clear.	0
	3	W.	2	Clear.	0		3	NW.	1	C. S.	6		3	N.	1	C. K.	6
	6	NW.	1	Clear.	0		6	NW.	1	C. S.	4		6	N. NE.	1	K.	10
	9	N. NE.	1	Clear.	0		9	N. NE.	1	C. K.	9		9	NE.	1	K.	10
	Noon.	N.	1	S.	1		Noon.	E. SE.	1	S.	1		Noon.	SE.	1	C.	4
	3	SE.	1	S.	1		3	E. SE.	1	C.	1		3	SE.	1	C. K.	8
	6	NE.	1	S.	3		6	E.	Airs.	Clear.	0		6	E. SE.	1	C. K. S.	9
	9	N.	1	C. K.	10		9	NE.	1	C. S.	4		9	E. SE.	1	C. K.	9

REMARKS.

October 16. Lightning and thunder at 6 p. m. Shooting stars at midnight.
19. Commenced raining at 5 o'clock and 40 minutes a. m.
20. Zodiacal light very brilliant during the evening. Shooting stars very numerous until 3. 30 a. m.
23. Commenced raining at 5 o'clock and 10 minutes p. m. Rain during the evening, 0. 230 inch.
24. Rain during the day, 0. 600 inch.
27. The thermometers, which had been attached to a rod suspended from the roof of the meteorological observatory, were taken down and attached to a vertical rod fixed to firm supports in the ground, in order to prevent any jar or lateral motion of the instruments from the action of the wind on the building.
28. A halo around the moon all the evening.

METEOROLOGICAL OBSERVATIONS.

y.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Oct. 31	0	SE.	1	K.	10	1863.						1863.					
	3	SE.	1	N.	10												
	6	SE.	1	N.	10												
	9	S.	1	N.	10												
	Noon.	W. NW.	2	C. K. S.	8												
	3	W. NW.	2	Clear.	0												
	6	NW.	2	Clear.	0												
	9	NW.	1	Clear.	0												
Nov. 1	0	NW.	2	Clear.	0	Nov. 2	0	NW.	1	Clear.	0	Nov. 3	0	SW.	1	C.	2
	3	NW.	1	Clear.	0		3	NW.	Airs.	Clear.	0		3	S.	2	Clear.	0
	6	NW.	2	C. K.	6		6	NW.	Airs.	Fog.	0		6	S.	1	C. K. S.	4
	9	NW.	1	Clear.	0		9	NE.	1	C.	4		9	SW.	1	C. K.	7
	Noon.	NW.	1	Clear.	0		Noon.	S. by E.	1	C.	6		Noon.	W. NW.	1	C. K.	6
	3	N.	1	Clear.	0		3	S. SE.	0	C.	3		3	W.	1	C. S.	4
	6	N. NW.	1	Clear.	0		6	S.		S.	1		6	W.	2	C. K. S.	4
	9	NW.	Airs.	Clear.	0		9	Calm.	0	S.	1		9	W.	2	Clear.	0
Nov. 4	0	W.	1	C. S.	2	Nov. 5	0	S.	Airs.	C.	2	Nov. 6	0	S. SW.	1	C. K.	10
	3	W.	1	C.	1		3	S. SE.	1	C.	1		3	SW.	1	K.	10
	6	W. NW.	1	C. S.	4		6	S. by E.	2	C. K.	3		6	SW.	2	C. S.	2
	9	S.	1	Clear.	0		9	S. by E.	2	C.	1		9	W.	3	C. K.	2
	Noon.	NW.	1	Clear.	0		Noon.	S.	5	Clear.	0		Noon.	W.	5	C. K.	2
	3	S.	1	Clear.	0		3	S.	2	C. K.	8		3	W.	4	C. K.	1
	6	S.	Airs.	Clear.	0		6	S. SW.	2	K.	10		6	W.	Airs.	Clear.	0
	9	S.	Airs.	Clear.	0		9	SW.	1	K.	10		9	W.	1	Clear.	0
7	0	W.	1	S.	1	Nov. 8	0	SW.	1	K.	4	Nov. 9	0	NW.	2	CS.	2
	3	W.	1	Clear.	0		3	W.	2	C.	2		3	NW.	1	C. K.	9
	6	S.	1	C. K.	6		6	W.	1	C.	3		6	N.	1	K.	10
	9	S.	3	S.	1		9	W. SW.	3	C. K.	4		9	N.	2	K.	10
	Noon.	S.	4	Clear.	0		Noon.	W. NW.	4	C. K.	3		Noon.	N. NW.	1	C. K.	4
	3	S.	4	Clear.	0		3	W. NW.	4	C. K.	6		3	NW.	1	C. K.	4
	6	S.	4	S.	1		6	NW.	1	C. S.	3		6	NW.	2	C. K.	10
	9	S.	2	S.	1		9	NW.	1	S.	1		9	NW.	1	C. K.	4
Nov. 10	0	NW.	2	C. S.	1	Nov. 11	0	S.	Airs.	Clear.	0	Nov. 12	0	S.	1	C. K.	4
	3	NW.	1	Clear.	0		3	S.	1	S.	1		3	SE.	1	C. K.	6
	6	W. NW.	1	Clear.	0		6	S.	2	C. S.	2		6	SE.	1	C. K.	6
	9	W.	2	S.	1		9	S.	1	C. S.	4		9	S.	1	C. K.	8
	Noon.	W.	4	C. K.	8		Noon.	S.	1	C. K.	5		Noon.	S. SW.	1	C. K.	8
	3	NW.	4	C. K.	4		3	S.	1	C. K.	8		3	S. by W.	1	C.	8
	6	NW.	1	Clear.	0		6	S.	2	C. K. S.	4		6	S. by W.	1	S.	1
	9	NW.	1	Clear.	0		9	S.	3	C. S.	6		9	S.	1	Clear.	0

REMARKS.

October 31. Commenced raining at half-past 2 o'clock a. m. A flock of wild geese going south at 5 p. m.
November 9. Snowing lightly at 7.35 a. m. A light shower of wet snow at 7 p. m.; not measurable.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Nov. 13	0	S.	Airs.	Clear.	0	1863. Nov. 14	0	S.	Airs.	S.	1	1863. Nov. 15	0	W.	1	K.	10
	3	SW.	1	C.	1		3	SW.	Airs.	Clear.	0		3	E.	Airs.	K.	10
	6	W.	1	C. S.	3		6	NW.	1	Clear.	0		6	N.	Airs.	Fog.	10
	9	SE.	1	S.	1		9	S. SE.	1	Hazy.			9	W. NW.	2	N.	10
	Noon.	SE.	1	C. S.	4		Noon.	S.	1	Hazy.			Noon.	NW.	4	S.	2
	3	S.	1	Hazy.			3	S. SE.	1	C. K.	7		3	W.	3	C.	1
	6	S.	Airs.	C. S.	2		6	NE.	2	K.	8		6	W. NW.	1	C. K. S.	9
	9	S.	Airs.	C. K.	3		9	SW.	1	N.	10		9	W.	1	C. K.	7
Nov. 16	0	N.	Airs.	K.	10	Nov. 17	0	W.	1	K.	10	Nov. 18	0	NW.	3	C. K.	3
	3	N.	1	C. K.	8		3	W. NW.	1	K.	10		3	NW.	2	S.	2
	6	N.	1	K.	10		6	W. NW.	2	C. S.	3		6	SW.	2	C. K.	9
	9	N. by E.	1	C. K.	9		9	NW.	2	S.	1		9	W. by S.	1	C. K. S.	8
	Noon.	N. NE.	1	C. K.	7		Noon.	W. NW.	2	S.	2		Noon.	W. SW.	2	C. K.	4
	3	NE.	1	C. K.	9		3	W. NW.	1	C. S.	4		3	S.	1	C.	6
	6	N.	1	K.	10		6	N. W.	3	C. S.	2		6	S.	1	S.	3
	9	N.	1	K.	10		9	W.	3	C. K.	3		9	S.	Airs.	S.	1
Nov. 19	0	Calm.	0	S.	1	Nov. 20	0	S.	1	C.	4	Nov. 21	0	NE.	1	K.	10
	3	W.	1	S.	1		3	S.	Airs.	C. S.	6		3	N.	2	K.	10
	6	W. NW.	1	C. K.	7		6	S.	Airs.	Hazy.			6	N. NW.	1	N.	10
	9	S.	Airs.	C. K.	8		9	S. by E.	1	C. K.	3		9	N.	1	N.	10
	Noon.	S. SE.	Airs.	K.	10		Noon.	S.	2	C. K.	4		Noon.	S. SE.	0	N.	10
	3	S.	1	C. S.	6		3	S. SW.	2	C. K.	5		3				
	6	S. SE.	1	C.	7		6	N.	1	C. K.	8		6	W.	2	N.	10
	9	S. by E.	1	C. K.	4		9	NW.	1	K.	10		9	SW.	1	N.	10
Nov. 22	0	S. SW.	1	K.	10	Nov. 23	0	NW.	Airs.	Clear.	0	Nov. 24	0	N.	Airs.	N.	10
	3	W.	2	C.	4		3	N. NW.	1	Clear.	0		3	NE.	1	Mist.	10
	6	W.	3	S.	1		6	N. by W.	1	S.	1		6	N.	1	N.	10
	9	NW.	2	S.	1		9	NE.	1	S.	1		9	N. NW.	1	N.	10
	Noon.	NW.	2	Clear.	0		Noon.	N.	1	Clear.	1		Noon.	NW.	1	Mist.	10
	3	NW.	1	Clear.	0		3	NE.	1	C. K.	8		3	S. SE.	1	K.	10
	6	NW.	1	Clear.	0		6	NE.	Airs.	C S.	10		6	SW.	Airs.	K.	10
	9	W.	1	Clear.	0		9	E.	Airs.	N.	10		9	SE.	Airs.	K.	10
Nov. 25	0	S.	1	K.	10	Nov. 26	0	NW.	2	C.	1	Nov. 27	0	W.	Airs.	Clear.	0
	3	SW.	1	K.	10		3	NW.	2	Clear.	0		3	W. NW.	1	C.	3
	6	W. SW.	1	C. S.	9		6	NW.	2	Clear.	0		6	S. SW.	Airs.	C.	
	9	NW.	2	S.	2		9	NW.	1	Clear.	0		9	S.	Airs.	C.	8
	Noon.	NW.	2	S.	1		Noon.	S.	1	Clear.	0		Noon.	S.	1	C.	6
	3	NW.	1	C. K. S.	10		3	SE.	1	Clear.	0		3	S.	1	C. S.	6
	6	NW.	2	K. S.	10		6	S.	Airs.	Clear.	0		6	S.	1	C. K.	4
	9	NW.	3	C. K.	9		9	W.	Airs.	Clear.	0		9	W.	1	C. K.	10

REMARKS.

November 14. Commenced raining at 3.55 p. m. A light shower. Lightning and thunder in the west at 5, 6, 7, 8, 9, and 10 o'clock p. m. Rain during the storm, 1.000 inch.
15. Heavy thunder from 7 until 8 p. m., with rain. Rain during the day, 0.210 inch.
16. Raining at 5 o'clock and 15 minutes p. m. Depth not measurable.
19. Several small shooting stars about midnight, of short flight.
20. A few drops of rain between 11 and 12 in the night.
21. Raining at 12 o'clock and 20 minutes a. m. Rain during the day, 0.600 inch.
22. At 12 o'clock and 10 minutes a. m. the wind changed to the west. A light shower of rain. Rain during the day, 0.600 inch.
23. Commenced raining a very fine mist at 8 o'clock p. m. Not measurable at midnight.
24. Raining moderately at intervals during the morning. Amount during the day, 0.130 inch.
27. A heavy white frost this morning.

y.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
63. . 28	0	NW.	1	K.	10	1863. Nov. 29	0	S.	Airs.	K.	10	1863. Nov. 30	0	NW.	3	C. K.	9
	3	NE.	1	K.	10		3	W.	1	K.	10		3	NW.	3	C. K.	6
	6	SE.	1	K.	10		6	N. NW.	3	C. K.	10		6	NW.	4	C.	4
	9	S. SE.	1	Fog.	10		9	N. NW.	4	C. S.	9		9	NW.	3	C. S.	2
	Noon.	S. SE.	1	N.	10		Noon.	NW.	3	C. K. S.	10		Noon.	NW.	3	K. S.	2
	3	SE.	Airs.	Fog.	10		3	NW.	3	C. S.	4		3	W. NW.	4	C. S.	2
	6	S.	Airs.	K.	10		6	NW.	2	C. K. S.	8		6	NW.	2	Clear.	0
	9	SE.	Airs.	C. K.	9		9	NW.	1	C. K. S.	8		9	NW.	1	Clear.	0
e. 1	0	NW.	1	S.	1	Dec. 2	0	W.	1	C.	2	Dec. 3	0	W.	1	C. S.	3
	3	NW.	1	Clear.	0		3	SW.	1	C. S.	4		3	W.	1	C. K.	8
	6	W.	1	S.	1		6	SW.	1	C. S.	6		6	NW.	1	C. K.	10
	9	SW.	1	Clear.	0		9	SW.	1	C. S.	3		9	NW.	1	C. K.	10
	Noon.	SW.	1	C. S.	5		Noon.	SW.	3	C. K.	9		Noon.	SE.	1	C. S.	6
	3	SW.	1	C.	3		3	SW.	3	C. K.	3		3	E.	1	C. S.	3
	6	SW.	1	S.	1		6	W.	1	S.	1		6	SE.	1	C. S.	2
	9	S. by W.	1	Clear.	0		9	W. NW.	2	C. K.	6		9	SE.	1	Clear.	0
. 4	0	E.	1	C. S.	4	Dec. 5	0	Calm.		C. S.	2	Dec. 6	0	NW.	2	C. K.	4
	3	W.	1	C.	2		3	NW.	1	C.	1		3	NW.	1	C. K.	6
	6	W.	1	S.	1		6	NW.	1	C. S.	3		6	N.	2	K.	10
	9	S.	1	C. K.	7		9	SE.	1	C. S.	4		9	N. by E.	2	Clear.	0
	Noon.	S.	1	C. K.	3		Noon.	NW.	1	C. K.	9		Noon.	NE.	1	Clear.	0
	3	S. SW.	1	C. S.	2		3	NW.	1	C. K.	10		3	NE.	1	Clear.	0
	6	S. SW.	2	S.	1		6	S. SW.	1	C. S.	2		6	NE.	1	Clear.	0
	9	SE.	1	C. S.	3		9	NW.	1	K. S.	2		9	N.	1	Clear.	0
. 7	0	NW.	1	Clear.	0	Dec. 8	0	NW.	Airs.	Clear.	0	Dec. 9	0	NW.	1	C. S.	3
	3	N. NW.	1	Clear.	0		3	NW.	Airs.	Clear.	0		3	NW.	1	C. S.	2
	6	NW.	1	S.	1		6	NW.	Airs.	Clear.	0		6	NW.	1	C. K. S.	6
	9	N. NW.	Airs.	Clear.	0		9	S.	Airs.	C.	7		9	NW.	1	C. K. S.	8
	Noon.	E.	Airs.	Clear.	0		Noon.	S. SE.	1	C. K.	6		Noon.	NW.	2	C. K. S.	6
	3	S.	1	Clear.	0		3	SE.	1	C. S.	2		3	NW.	3	C. S.	4
	6	S. SW.	1	Clear.	0		6	S.	Airs.	S.	1		6	N. by W.	1	S.	1
	9	NW.	1	Clear.	0		9	NW.	1	Clear.	0		9	N. NW.	1	S.	1
Dec. 10	0	NW.	1	S.	1	Dec. 11	0	NE.	1	C. S.	2	Dec. 12	0	SE.	1	C. S.	2
	3	NW.	1	S.	1		3	E.	1	C. K.	7		3	SW.	1	C. S.	3
	6	N.	1	S.	1		6	E.	1	K.	10		6	S. by W.	1	C. S.	4
	9	N. by E.	1	C. S.	1		9	SE.	1	N.	10		9	SE.	1	C. K.	10
	Noon.	N. by E.	2	C. S.	1		Noon.	S. SE.	1		10		Noon.	SE.	1	C. N.	10
	3	N. by E.	1	S.	1		3	S. SE.	0	N.	10		3	N. by E.	1	C. K.	10
	6	N.	1	S.	1		6	S. SW.	1	K.	10		6	NW.	1	K.	10
	9	NE.	1	Clear.	0		9	SE.	1	C. K.	6		9	S.	1	K.	10

REMARKS.

November 28. Commenced raining at 6. 30 a. m. Depth of rain, 0. 254 inch.
30. Heavy white frost this morning.
December 1. Very heavy white frost this morning.
2. Light frost this morning.
5. Halo around the moon, and a small circle around Venus, this morning.
7. Numerous shooting stars from various points during the night east of the Pleiades. Courses in different directions, principally westward, and inclining to the earth. Some as bright as the 3d magnitude. Heavy white frost this morning.
8. Several shooting stars during the night. Heavy white frost this morning.
9. Heavy white frost this morning.
12. Several small shooting stars about midnight from the direction of the Great Bear. Course, SW. Time of flight about half a second. A very bright shooting star in the west at 12 o'clock and 15 minutes a. m. Course, SW. Rain during the day, 0.010 inch.

ay.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
863. ec. 13	0	E.	1	K.	10	1863. Dec. 14	0	S.	Airs.	C. K.	10	1863. Dec. 15	0	W.	1	S.	1
	3	SE.	1	N.	10		3	S.	1	N.	10		3	W.	1	S.	1
	6	SE.	3	N.	10		6	SE.	1	K.	10		6	W. NW.	1	S.	1
	9	S.	1	C. K.	10		9	S.	1	C. K.	10		9	NW.	1	C. S.	6
	Noon.	SW.	2	C.	2		Noon.	SW.	4	C. K. S.	2		Noon.	NW.	2	C.	3
	3	SW.	1	C. K.	4		3	W. NW.	2	N.	9		3	NW.	1	C.	1
	6	SE.	1	S.	1		6	W.	3	C. S.	2		6	NW.	2	Clear.	0
	9	SE.	1	C. K. S.	4		9	W.	1	C.	2		9	NW.	2	Clear.	0
ec. 16	0	N. NW.	1	Clear.	0	Dec. 17	0	NE.	2	K.	10	Dec. 18	0	NW.	1	K.	10
	3	NW.	1	C.	2		3	NE.	1	K.	10		3	NW.	1	N.	10
	6	N.	1	C. S.	3		6	NE.	1	N.	10		6	NW.	1	K.	10
	9	N. by E.	1	C. K.	7		9	NE.	1	N.	10		9	NW.	1	K.	10
	Noon.	NE.	1	C. K.	10		Noon.	N.	1	N.	10		Noon.	NW.	2	C. K. S.	9
	3	E.	1	C. K.	10		3	N.	1	K.	10		3	NW.	2	C. K.	10
	6	E.	1	C. K.	8		6	N. NE.	1	N.	10		6	NW.	1	K.	10
	9	NE.	1	C. S.	10		9	N. by E.	1	N.	10		9	NW.	1	K.	10
ec. 19	0	NW.	2	K.	10	Dec. 20	0	NW.	2	K.S.	8	Dec. 21	0	W. SW.	1	C. K.	9
	3	NW.	3	K.	10		3	NW.	1	C.	3		3	W.	1	C. K.	8
	6	NW.	2	C. S.	3		6	W. NW.	1	S.	1		6	NW.	2	S.	1
	9	NW.	3	C. S.	9		9	W. NW.	2	C. S.	2		9	W.	1	C. S.	2
	Noon.	W.	3	C. S.	3		Noon.	W.	4	C. K.	9		Noon.	SE.	1	C. K.	10
	3	NW.	2	C. K.	10		3	NW.	3	C. K. S.	8		3	S.	1	C. K. S.	10
	6	NW.	3	C. K.	9		6	NW.	1	S.	1		6	S. SE.	1	K.	10
	9	NW.	2	C. K. S.	2		9	NW.	1	C. K.	8		9	E.	1	K.	10
ec. 22	0	E.	1	K.	10	Dec. 23	0	N.	1	K.	10	Dec. 24	0	NW.	3	Clear.	0
	3	NE.	1	K.	10		3	N.	1	K.	10		3	NW.	1	Clear.	0
	6	NE.	1	K.	10		6	N.	1	K.	10		6	NW.	1	Clear.	0
	9	N. NE.	1	K.	10		9	N. NW.	1	C. S.	3		9	NW.	1	Clear.	0
	Noon.	NE.	1	K.	10		Noon.	N.	2	Snow.	10		Noon.	N. NW.	2	Clear.	0
	3	E. NE.	1	K.	10		3	NW.	2	C. K.	10		3	N. NW.	1	Clear.	0
	6	NE.	1	N.	10		6	N. NW.	2	Clear.	0		6	Calm.		Clear.	0
	9	NE.	1	K.	10		9	NW.	2	Clear.	0		9	Calm.		Clear.	0
ec. 25	0	NE.	1	Clear.	0	Dec. 26	0	NW.	1	C.	1	Dec. 27	0	S.	1	K.	10
	3	N. by W.	1	C.	1		3	NW.	1	Clear.	0		3	S.	1	Mist.	10
	6	N. NW.	1	C.	1		6	NW.	1	Clear.	0		6	S.	1	K.	10
	9	W. NW.	1	Clear.	2		9	N.	1	C.	2		9	S.	1	N.	10
	Noon.	S.	1	Hazy.	5		Noon.	SE.	1	Clear.	0		Noon.	S.	1	N.	10
	3	S.	1		10		3	SE.	1	C.	10		3	E.	1	N.	10
	6	E. NE.	1	C. K.	7		6	SW.	Airs.	C. K.	6		6	NE.	1	N.	10
	9	SE.	1	C. K.	10		9	SE.	Airs.	K.	10		9	NE.	1	N.	10

REMARKS.

December 13. A few shooting stars seen about 8 p. m. Rain during the morning gauged at 9 a. m., 0.520 inch.
14. Rainbow in the NW. at 11.45 in the morning. Raining at 3 p. m.
15. Several shooting stars in the early part of the night.
17. Rain during the day, 0.900 inch.
22. Snowing at 6 and 10 p. m.
23. Flying snow flakes at intervals during the early part of the day.
27. Raining at 9 o'clock a. m. Amount of rain during the day, 0.860 inch.

METEOROLOGICAL OBSERVATIONS.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1863. Dec. 28	0	N.	1	N.	10	1863. Dec. 29	0	W. NW.	1	K.	10	1863. Dec. 30	0	S.	1	C. K.	2
	3	NE.	1	N.	10		3	N.	1	K.	10		3	SW.	Airs.	C.	2
	6	NE.	1	N.	10		6	NW.	1	K.	10		6	SW.	Airs.	Hazy.	
	9	NE.	1	Fog.	10		9	SW.	Airs.	K.	10		9	S. SE.	Airs.	C.	2
	Noon.	NE.	1	N.	10		Noon.	SW. by S.	2	K.	10		Noon.	S. SE.	1	C.	4
	3	NW.	1	N.	10		3	SE.	1	Clear.	0		3	S. SE.	1	C. K.	7
	6	N.	1	K.	10		6	SW.	1	C. S.	2		6	SW.	Airs.	S.	1
	9	NW.	1	K.	10		9	SW.	1	Fog.	0		9	E.	Airs.	C.	6
Dec. 31	0	N. NW.	1	C. K.	10												
	3	NW.	1	K.	10												
	6	NE.	1	K.	10												
	9	NE.	Airs.	N.	10												
	Noon.	NE.	1	N.	10												
	3	E. NE.	4	N.	10												
	6	NE.	1	N.	10												
	9	NE.	2	N.	10												

REMARKS.

December 31. Commenced raining at 8 o'clock in the forenoon. Amount of rain during the day, 0.600 inch.

METEOROLOGICAL OBSERVATIONS.

MEAN MONTHLY AND ANNUAL RESULTS,

1863.

TABLE I.

Monthly means of barometric pressure.

ate.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
863.	in.	in.	in.	in.	in.	in.	in.	in.
uary ...	29.909	30.012	30.019	30.058	30.018	29.984	29.998	30.012
ruary ..	30.135	30.119	30.132	30.152	30.123	30.089	30.105	30.131
ch	29.996	29.978	29.991	30.013	29.989	29.947	29.963	29.994
l	29.900	29.889	29.907	29.922	29.901	29.869	29.875	29.898
.. ..	29.897	29.896	29.920	29.926	29.900	29.862	29.850	29.888
e	29.883	29.879	29.893	29.912	29.894	29.861	29.857	29.892
.. ..	29.909	29.867	29.910	29.933	29.923	29.891	29.881	29.912
ust	29.964	29.962	29.981	30.001	29.989	29.942	29.945	29.968
ember..	30.050	30.051	30.067	30.080	30.057	30.025	30.011	30.044
ber....	30.004	30.023	30.034	30.064	30.037	29.993	30.004	30.036
ember..	29.986	29.990	30.003	30.029	29.986	29.962	29.978	30.002
mber ..	30.128	30.086	30.116	30.139	30.119	30.077	30.098	30.116
'l means	29.980	29.979	29.998	30.019	29.995	29.875	29.964	29.991

TABLE II.

Monthly means of dry thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
January ...	34.41	33.68	32.64	34.87	43.66	43.04	38.53	36.25
February ..	32.23	31.12	30.83	33.21	38.82	40.88	38.02	34.84
March	34.78	33.04	32.75	36.44	40.99	43.33	40.97	37.03
April	45.08	42.68	41.51	47.66	53.19	54.92	52.55	47.78
May.......	57.56	55.17	54.43	64.85	71.69	74.11	69.20	62.06
June	63.87	62.24	61.91	69.79	75.73	77.35	73.53	67.19
July	70.40	69.48	69.40	74.94	79.61	80.97	77.56	72.41
August	71.08	69.02	68.33	76.94	84.85	87.64	80.54	74.17
September..	59.02	57.31	56.19	63.13	72.52	75.14	67.33	61.71
October....	49.61	48.13	47.28	52.97	61.84	62.85	55.73	51.44
November..	43.68	41.87	40.96	44.77	53.18	54.64	48.09	45.08
December ..	32.53	31.47	30.68	33.18	40.73	41.54	36.63	34.14
Ann'l means	50.35	47.93	45.58	52.73	59.73	61.37	56.56	52.01

TABLE III.

Monthly means of wet thermometer.

ate.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
363.	°	°	°	°	°	°	°	°
ary ...	33.12	32.80	31.68	33.29	37.67	38.89	36.36	34.48
uary ..	30.76	29.99	29.44	31.39	35.38	35.97	34.44	32.09
h	33.24	32.17	31.67	37.29	37.34	38.96	37.65	34.76
l	42.60	40.69	39.64	43.82	47.45	48.23	47.41	44.55
....	54.81	53.50	52.94	58.94	61.72	63.33	60.92	56.99
......	61.29	59.98	59.95	65.07	66.75	68.51	67.22	60.10
.. ..	69.61	68.87	68.92	72.63	75.19	75.59	73.78	70.99
ıst	69.41	67.91	67.24	71.93	75.77	77.31	74.34	71.19
ember..	57.86	56.30	56.07	61.27	64.32	69.95	65.06	60.63
ber....	48.11	46.73	45.88	50.11	55.69	56.51	52.15	49.53
mber..	41.29	39.69	38.58	40.76	46.51	47.17	43.48	41.97
mber ..	30.48	29.72	29.14	31.01	36.14	37.03	34.26	31.93
l means	47.72	46.53	45.93	49.79	53.33	54.79	52.25	49.10

TABLE IV.

Monthly means of sun thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.	°	°	°	°	°	°	°	°
January ...	. .	. .	. .	. .	. .	. .	. .	. .
February ..	. .	. .	. .	. .	. .	. .	. .	. .
March	. .	. .	. .	56.67	74.73	79.63	76.25	. .
April	. .	. .	. .	69.63	89.65	90.55	82.11	. .
May.......	. .	. .	. .	94.10	111.11	116.03	105.48	. .
June	66.07	61.49	62.37	98.84	116.55	119.75	100.40	77.33
July	73.16	69.62	69.71	95.57	116.05	119.49	111.01	81.18
August	71.66	69.66	67.21	107.77	127.37	128.21	122.58	85.94
September..	57.87	56.37	54.73	89.23	111.54	115.51	103.98	64.73
October....	48.20	46.78	44.82	76.21	95.43	100.01	84.49	49.11
November..	41.86	40.05	38.40	66.28	87.25	91.16	75.42	43.09
December ..	32.36	30.07	28.65	48.39	70.33	68.99	55.44	35.89
Add'l means	. .	. .	. .	. .	. .	. .	. .	. .

TABLE V.

Aggregate fall of rain during the year 1863.

Month.	Inches.
January	4.492
February	3.686
March	5.141
April	5.141
May	3.096
June	1.145
July	7.181
August	1.270
September	2.580
October	4.006
November	2.194
December	3.630
Annual amount	43.562

TABLE VI.

Showing the number of times in each month that the wind blew from the north at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	3	4	6	5	2	2	4	2
February	3	6	5	3	5	5	6	8
March	3	5	7	4	5	2	1	1
April	2	4	5	3	2	4	5	3
May	6	5	1	1	1	4	2	3
June	2	3	3	1	2	1	2	1
July	2	1	3	4	2	3	5	5
August	3	3	4	4	5	5	2	5
September	2	3	0	2	3	3	2	2
October	3	5	4	10	4	5	2	5
November	2	3	6	5	3	1	3	1
December	4	3	5	4	3	2	3	2
Sums	35	45	49	46	37	37	37	38

Showing the number of times in each month that the wind blew from the northeast at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	3	6	5	6	5	3	6	7
February	6	4	3	3	2	3	4	2
March	7	7	4	8	5	4	4	4
April	2	3	3	5	4	1	4	4
May	3	2	6	5	4	1	2	1
June	1	3	4	4	2	1	1	3
July	4	3	6	5	2	0	4	3
August	0	1	2	3	2	1	2	1
September	3	1	5	5	2	2	2	2
October	1	0	2	4	0	1	4	3
November	1	2	0	3	0	2	2	4
December	3	2	3	5	5	3	4	6
Sums	34	34	43	56	33	22	39	40

Showing the number of times in each month that the wind blew from the east at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	2	3	0	0	3	2	3	0
February	2	0	1	3	0	2	4	3
March	3	4	3	4	3	4	4	4
April	2	1	0	2	1	1	5	3
May	0	0	0	2	0	2	6	3
June	1	1	1	3	1	3	5	2
July	1	2	0	2	3	2	2	4
August	0	0	0	1	1	0	1	0
September	2	4	3	1	2	2	7	1
October	4	2	2	3	5	3	8	3
November	0	1	0	0	0	0	0	1
December	3	1	1	0	1	5	3	2
Sums	20	19	11	21	20	26	48	26

Showing the number of times in each month that the wind blew from the southeast at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	1	0	1	1	4	6	4	1
February	3	4	3	3	4	3	1	1
March	0	0	2	1	1	4	3	5
April	4	1	0	3	4	3	3	3
May	5	3	1	5	6	6	4	1
June	7	4	3	3	2	6	6	7
July	8	5	5	3	7	3	7	6
August	3	1	0	3	3	3	2	3
September	0	1	0	7	8	6	6	4
October	4	2	2	3	6	8	3	3
November	1	1	3	4	2	2	1	3
December	1	1	2	3	4	3	2	6
Sums	37	23	22	39	51	53	42	43

Showing the number of times that the wind blew from the south at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	6	3	3	9	7	10	6	6
February	0	4	5	3	5	6	5	2
March	3	0	2	3	5	2	3	1
April	4	2	6	5	7	7	3	4
May	4	5	6	8	7	3	12	12
June	4	5	7	7	6	6	5	2
July	7	8	8	12	11	8	8	6
August	8	7	8	9	10	14	11	6
September	6	1	2	4	6	7	5	7
October	1	2	1	3	5	3	2	3
November	10	4	5	7	10	10	10	5
December	3	2	1	6	7	6	5	1
Sums	56	43	54	76	86	82	75	55

Showing the number of times that the wind blew from the southwest at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	1	1	2	3	2	1	3	0
February	2	2	3	1	1	1	2	2
March	0	2	2	2	3	4	3	3
April	3	1	0	1	1	1	1	2
May	3	4	2	2	3	2	0	3
June	6	3	3	0	4	2	3	6
July	1	2	2	3	2	0	2	2
August	7	4	2	2	2	3	7	3
September	1	4	2	1	2	3	1	2
October	1	2	0	1	1	0	2	1
November	1	4	1	2	1	2	2	4
December	0	3	3	3	4	3	4	2
Sums	26	32	22	21	26	22	30	30

NOTE.—In preparing these Tables whenever the wind has been recorded in the journal as N.NE., E.NE., E.SE., &c., the observations are placed in the table most nearly coinciding with the direction.

TABLE VI—Continued.

nwing the number of times that the wind blew from the west at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
nuary	3	3	0	1	2	3	1	3
bruary . . .	6	5	4	3	7	6	3	3
irch	4	3	5	4	4	8	6	6
ril	1	6	7	5	3	6	3	5
iy	6	6	8	3	4	6	3	2
ne	5	3	3	9	4	6	4	4
ly	0	2	1	3	0	3	3	0
gust	3	7	11	6	4	1	1	5
ptember . . .	4	5	9	3	3	2	2	2
tober	4	6	7	6	5	7	1	3
vember . . .	5	8	8	3	6	6	4	7
cember . . .	5	4	3	3	2	1	2	2
Sums . . .	46	58	66	49	44	55	33	42

Showing the number of times that the wind blew from the northwest at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January . . .	12	11	12	7	6	3	7	12
February . . .	3	3	4	9	3	3	3	7
March	11	10	6	5	5	4	7	7
April	14	10	9	6	8	7	6	6
May	4	6	5	5	5	0	4	6
June	4	8	6	3	9	5	4	9
July	8	8	6	1	4	6	2	4
August	6	5	3	2	3	3	1	5
September . . .	11	10	9	7	3	3	5	9
October . . .	12	12	13	2	5	2	9	10
November . . .	9	7	7	7	8	5	8	8
December . . .	12	13	11	6	4	7	6	8
Sums . . .	106	103	91	60	63	48	62	91

nwing the number of times in each month that it was calm at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
nuary	0	0	1	0	0	1	0	0
bruary . . .	0	0	0	0	0	0	0	0
irch	0	0	0	0	0	0	0	0
ril	0	0	0	0	0	0	0	0
iy	0	0	0	0	0	0	0	0
ne	0	0	0	0	0	0	0	0
ly	0	0	0	0	0	0	0	0
gust	2	1	0	0	0	0	0	2
ptember . . .	1	0	0	0	0	0	0	2
tober	1	0	0	0	0	0	0	
vember . . .	1	0	0	0	0	0	0	1
cember . . .	1	0	0	0	0	0	1	1
Sums . . .	6	1	1	0	0	1	1	6

TABLE VII.

owing the number of times in each month that it was clear at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
nuary	6	4	2	2	1	2	3	6
bruary . . .	3	3	1	1	1	2	1	3
irch	6	2	1	2	0	1	0	4
ril	6	3	1	1	1	3	4	7
iy	8	11	4	6	1	1	2	7
ne	7	7	6	2	0	0	2	4
ly	4	3	2	1	1	1	1	4
gust	11	8	7	6	1	3	2.	9
ptember . . .	14	10	4	5	6	7	7	17
tober	6	8	7	4	3	4	4	8
vember . . .	6	8	3	3	7	5	7	8
cember . . .	4	4	2	4	3	3	4	8
Sums	81	71	40	37	25	32	37	85

Showing the number of times cirrus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January . . .	3	5	0	3	0	1	1	6
February . . .	2	0	1	2	3	2	1	3
March	0	1	0	3	4	3	2	3
April	2	3	3	5	2	2	1	4
May	6	3	4	5	6	7	3	1
June	5	3	5	8	3	3	6	3
July . . .	1	3	3	2	1	3	7	3
August . . .	7	8	6	6	8	7	4	6
September . .	3	3	1	2	2	4	2	0
October . .	6	4	1	5	6	3	1	1
November . . .	4	6	3	3	2	4	1	0
December . . .	2	6	1	3	4	2	0	2
Sums . . .	41	45	28	47	41	41	29	32

TABLE VII.—Continued.

Number of times cirro-cumulus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	5	5	1	10	13	7	8	6
February . . .	6	5	4	8	9	11	6	5
March	2	5	5	9	12	12	12	6
April	3	4	6	6	14	15	11	4
May	5	3	4	7	11	13	10	7
June	8	10	9	9	16	19	13	6
July	8	6	5	13	17	18	11	5
August	11	6	6	8	16	15	14	6
September . . .	3	10	4	8	16	16	6	5
October	4	6	4	9	9	14	3	9
November . . .	4	4	8	7	10	10	2	8
December . . .	5	4	1	6	7	9	4	4
Sums	64	68	57	100	150	159	100	71

Number of times cirro-stratus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January . . .	1	1	4	1	2	7	4	2
February . . .	1	2	4	3	3	2	7	2
March	2	2	5	1	1	2	7	2
April	0	1	2	2	1	0	3	2
May	0	1	1	1	1	1	3	2
June	1	1	3	0	0	0	2	3
July	1	0	3	0	0	0	0	1
August . . .	1	3	1	3	1	3	5	1
September . . .	2	0	1	0	1	1	8	2
October . . .	4	4	4	2	1	2	8	5
November . . .	2	1	5	2	1	6	4	1
December . . .	7	3	5	8	3	4	4	2
Sums . . .	22	19	38	23	15	28	55	25

Showing the number of times that cumulus clouds prevailed at the hours of observation,

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	8	6	9	5	5	2	4	6
February . . .	8	6	7	2	1	2	6	7
March	9	12	8	8	4	3	4	6
April	10	7	7	5	4	1	3	6
May	5	4	5	3	3	5	5	6
June . . .	7	7	7	7	4	4	5	6
July	10	11	7	6	4	3	3	8
August . . .	0	2	2	1	1	1	1	3
September . . .	5	5	6	6	2	1	2	3
October	5	6	5	5	1	1	3	4
November . . .	9	7	3	1	1	1	5	4
December . . .	8	6	9	3	2	2	5	6
Sums	84	79	75	52	32	26	46	65

Showing the number of times that cumulo-stratus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January . . .	0	1	1	0	1	2	2	0
February . . .	0	1	1	1	0	0	1	0
March	0	0	1	0	0	0	1	0
April	0	0	1	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	1	0	0	1	1	0	1	2
July	0	1	0	0	0	1	1	1
August . . .	0	0	1	2	1	1	3	1
September . . .	1	0	1	1	0	0	3	3
October . . .	1	0	2	0	3	0	4	1
November . . .	1	0	2	2	2	1	5	2
December . . .	0	0	1	2	3	2	1	3
Sums . . .	4	3	11	9	11	7	22	13

Showing the number of times that stratus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January	1	2	7	2	2	2	3	0
February . . .	2	1	1	0	0	1	1	2
March	7	4	1	1	1	0	1	4
April	2	4	1	1	1	1	0	1
May	0	1	1	0	0	0	1	3
June	0	0	0	0	0	0	0	3
July	1	1	0	0	0	0	0	3
August	0	1	3	0	0	0	1	4
September . . .	2	1	3	0	0	0	1	0
October	2	0	0	1	3	1	4	1
November . . .	7	4	2	2	7	3	4	3
December . . .	3	2	7	0	0	1	8	1
. . .	27	21	26	7	14	9	24	25

Showing the number of times that nimbus clouds prevailed at the hours of observation.

Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1863.								
January . . .	6	6	5	5	5	5	6	5
February . . .	5	8	7	9	8	6	5	4
March	5	5	8	6	8	8	4	5
April	6	5	6	7	5	6	7	5
May	2	3	2	3	3	1	3	3
June	3	3	1	0	3	0	1	3
July	3	3	7	5	5	2	4	2
August . . .	1	1	1	1	0	1	0	1
September . . .	1	0	3	1	1	0	0	0
October . . .	2	1	3	4	6	4	3	2
November . . .	1	1	2	3	3	0	1	3
December . . .	1	5	3	5	6	5	4	3
Sums . . .	36	41	48	49	53	38	38	36

LIST

OF

PUBLICATIONS PRESENTED TO THE LIBRARY

DURING

THE YEAR 1863.

LIST OF PUBLICATIONS PRESENTED TO THE LIBRARY DURING THE YEAR 1863.

Date.	Publications.	From whom received.
Jan. 3	Meteorologische Waarnemingen in Nederland en zijne bezittingen. 1861	The Royal Netherlands Meteorological Institute.
6	Notice to Mariners. Nos. 38, 39	The British Hydrographical Office.
9	Proceedings of the American Academy of Arts and Sciences. Vol. V, pages 313–384	The American Academy of Arts and Sciences.
13	Bulletin mensuel de la Societé Imperiale Zoologique d'Acclimatation. Tome IX. No. 11.	The Imperial Zoological Society of Acclimatation.
	Monthly Meteorological Register, at the Provincial Magnetical Observatory, Toronto, Canada West. Aug. and Sept., 1862	The Provincial Magnetical Observatory, Toronto.
14	Notice to Mariners. Nos. 40, 41	The British Hydrographical Office.
	Ephemerides pour la Recherche de la Comete periodique de d'Arrest a son porchain retour en 1863 et 1864	M. Gion Villarceau.
16	Reise der Oesterreichischen Fregatte Novara um die Erde, in den Jahren 1857, 1858, 1859, unter der Besehlen des Commodore B. von Wullerstorf-Urbair	Com. B. von Wullerstorf-Urbair.
27	Catalogue of the Officers and Students in Marietta College. 1862–'63	Marietta College.
Feb. 3	Notice to Mariners. No. 1	The British Hydrographical Office.
5	Annales de l'Observatoire Physique Central de Russie. 1859	The Central Physical Observatory, at St. Petersburg.
	Nova Acta Regiæ Societatis Scientiarum Upsaliensis. Seriei Tertiæ. Vol. IV. Fasc. 1. 1862	The Royal Society of Sciences, Upsal.
	Sur deux Inegalites d'une Grandeur remarquable dans les Apparitions de la Cômete de Halley, pan A. J. Augstiour	A. J. Augstiour.
	Meteorologische Beobachtungen, aufgezeichnel auf Christiania Observatorium Zweite Leif. 1842–'47	The Royal University of Norway.
	Reise der Oesterreicheschen Fregatte Novara Nautisch-Phys. Theil. I Abth	The Hydrog'l Dept. of the (Austrian) Imperial Marine.
	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1862. XI	Justus Perthes.
	Bullettino Meteorologico del Osservatorio del Collegio Romano, 1862. Nos. 1–20	The Observatory of the Roman College.
	Programm der eidgenossen polytechnischen Schule fur das Schuljahre. 1862–'63	The Polytechnic School at Zurich.
	Proceedings of the Royal Society. Vol. XII. No. 51	The Royal Society of London.
	Proceedings of the Royal Geographical Society of London. Vol. VI. No. 5	The Royal Geographical Society of London.
	Quarterly Report of the Meteorological Society of Scotland, for the quarter ending Sept. 30, 1862	The Meteorological Society of Scotland.
	Allgemeine Bibliographie. 1862. Sept. and Oct	F. A. Brockhaus.
13	House Journal, 2d session 37th Congress	The U. S. House of Representatives.
	Executive Documents, 1862. Vols. 1, 4, 5, 12	Same.
	House Miscellaneous Documents. 1861–'62	Same.
	Reports from Court of Claims. 1861–'62. Vol. I	Same.
14	Engraving of the Olcott Meridian Circle, made for the Dudley Observatory, Albany	Prof. G. W. Hough.
	Transactions of the Bombay Geographical Society. Vols. XIV, XV	The Bombay Geographical Society.
	Catalogue of the Library of the Bombay Geographical Society	Same.
17	Notice to Mariners. No. 2	The British Hydrographic Office.
19	Synopsis of Meteorological Observations for December, 1862, and January, 1863, taken by J. B. Trembley, M. D., at Toledo, Ohio	J. B. Trembley, M. D.
23	Boletin del Observatorio Fiscis-Meteorico de la Habana. 1862. Parte I. Observaciones Horarias. Julio—Decembre	Senor Don Andres Poey.
24	Four packages public documents	U. S. House of Representatives.
25	Berliner Astronomisches Jahrbuch. 1865. (2 copies)	Prof. Encke.
26	Notice to Mariners. No. 3	The British Hydrographic Office.
	Astronomische Beobachtungen angestellt auf der Sternwarte des Konigl. Lyzenms in Speyer, von F. M. Schwerd. 1^{te} und 2^{te} Abtheilungen. 1826, 1827	Prof. J. S. Hubbard, U. S. N.
	Ansfuhiliche Methode mit dem Fraunhoferschen Heliometer Beobachtungen anzustellen nebst Cometen-beobachtungen mit solchen Instrumente auf der Emestinischen Sternwarte Seeberg angestellt, von P. A. Housen	Same.
	Memoire sur la Theorie des Variations des Elemens des Planetes et en particulier des Variations des grands axes de leurs orbites, par J. L. Lagrange	Same.
	Elements of Geometry and Trigonometry, by B. Sestini	Same.
March 2	Calendar and Course of Study of St. Stephen's College. 1862–'63	St. Stephen's College.
6	The Compass. U. S. Naval Academy, 1863	The U. S. Naval Academy.
	Notice to Mariners. No. 4	The British Hydrographical Office.
9	Proceedings of the Royal Geographical Society of London. Vol. VII. No. 1	The Royal Geographical Society of London.
10	Monthly Meteorological Register at the Provincial Magnetical Observatory, Toronto, Canada West. Oct. and Nov., 1862	The Provincial Magnetical Observatory, Toronto.
12	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1862. XII. Erganz. 9, 10.	Justus Perthes.
14	Catalogue of the Library of Congress	The Library of Congress.
18	Mittheilungen der kaiserlichen koniglichen Geographischen Gesellschaft. V Jahrgang. 1861	The Imperial Royal Geographical Society.
	Sitzungsberichte der k. bayerischen Akademie der Wissenschaften zu Munchen. 1861. II. 1862. I. 1862. II. Heft. I	The Royal Bavarian Academy of Sciences.
	Annuaire de la Societé Meteorologique de France. Tome X. 1862. 2^{me} Partie. Bulletin des Seances. F. 5–12	The Meteorological Society of France.
	Coup d'Oeil sur l'Hydrologie de Mexique, par Henri de Saussure, 1^{te} Partie	Henri de Saussure.
21	Bulletin mensuel de la Societé Imperiale Zoologique d'Acclimatation. Tome XII. No. 12.	The Imperial Zoological Society of Acclimatation.
25	Observatorio Magnetico y Meteorologico del Real Colegio de Belen, en la Habana. Resumen de las Observaciones del mes de Octobre, 1862	The Magnetical Observatory, Havana.
28	Description of a new Cataloguing and Charting Machine, by G. W. Hough, A. M	Prof. G. W. Hough.
30	Hamburger Elb-und Hafen Karten	The City of Hamburg.
	Karte der Lubecker Bucht und der Trave bis Lubeck	The City of Lubeck.
	Storm Kaart aangevende de verschillende Windrigten waarnit de stormen gewood hebben, alsmede de maandelijksche Stormprscenten	K. F. R. Andran.
	Notice to Mariners. Nos. 5–8	The British Hydrographic Office.

Date.	Publications.	From whom received.
April 2	Recent Researches relating to Nebulæ, by Prof. A. Gautier	Prof. G. P. Bond.
3	Allgemeine Bibliographie. 1862. Nov., Dec	F. A. Brockhaus
	Meteorologische Beobachtungen an der k. k. Sternwarte in Wien, von 1755 to 1855. Dritter Band	The I. R. Observatory at Vienna.
	Annalen der k. k. Sternwarte in Wien. Dritter Folge. Eilten Band	Same.
9	Astronomische Beobachtungen auf der koniglichen Universitato-Sternwarte zu Konigsberg. Vieir und dreissigste Abth	The Observatory at Konigsberg.
	Wm. Herschel's verzeichnisse von Nebelflecken und Sternhaufen, bearbeitet von A. Anwers	Dr. A. Anwers.
	Untersuchungen uber verænderliche Eigenbewegungen von G. F. J. A. Anwers. Eister Theil	Same.
	Declinationes Stellarum fundamentalium novæ ex ultimis illi Bessel Observationibus derivatæ. E. Luther	Dr. Ed. Luther.
	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1863. I	Justus Perthes.
	Neueste Schriften der Naturforschenden Gesellschaft in Dantzig. Bauden III, IV	The Philosophical Society at Dantzig.
14	Monthly Meteorological Register at the Provincial Magnetical Observatory, Toronto, Canada West. Dec., 1862, and Jan., 1863	The Provincial Magnetical Observatory, To
	On the Magnetic Disturbances at Toronto during the years 1856 to 1862, inclusive, by G. T. Kingston	G. T. Kingston, Esq.
May 1	Executive Documents, 2d session 37th Congress. 1861–'62. Vols. 2, 3, 7, 9, 10, 11	U. S. House of Representatives.
	Reports of Committees, 2d session 37th Congress. Vols. 1, 2, 3, 4	Same.
	Reports of Court of Claims. Vol. 2	Same.
	Package of public documents	Same.
	Bulletin de la Societé Imperiale Zoologique d'Acclimatation. Tome X. Nos. 1 and 3	The Imperial Zoological Society of Acclimat
	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1863. II	Justus Perthes.
19	Annales de l'Observatoire Imperiale de Paris. Observations I, III, IV, V, XVI, XVII.	The Imperial Observatory of Paris.
	Atlas Ecliptique par Chacornac. Nos. 2, 2^{bis}, 9, 15, 39, 46	Same.
	Almanaque Nautico para 1864, calculado de Orden de S. M. en el Observatorio de Marina de la Ciudad de San Fernando	The Marine Observatory, San Fernando.
	Astronomische Beobachtungen auf der Grossherzoglichen Sternwarte zu Manheim Erste Abtheilung	The Grand Ducal Observatory at Manheim.
	Sitzungsberichte der kaiserlichen Akademie der Wissenchaften. Math. nat. Classe, 1862. I Abth. 3, 4, 5, 6, 7. 1862. II Abth. 5, 6, 7, 8.	The Imperial Academy of Sciences at Vienn
	Transactions of the Academy of Science of St. Louis. Vol. 2. No. 1	The Academy of Science of St. Louis.
	Proceedings of the Royal Society. Vol. XII. Nos. 52, 53, 54	The Royal Society of London.
	Annuaire de la Societé Meteorologique de France. Tome VIII. 1^{re} Partie. Tableaux Met. F. 1–8	The Meteorological Society of France.
23	Twenty-one Charts of Surveys of Northern and Northwestern Lakes	The Bureau of Topographical Engineers.
28	Telegraphic Submarine Lines between Europe and America, and the Atlantic and Pacific, by A. de Marcoartu	A. de Marcoartu.
June 1	Annals of the Astronomical Observatory of Harvard College. Vol. IV. Part I	Prof. G. P. Bond.
	Report of the Committee of the Overseers of Harvard College appointed to visit the Observatory in the year 1862, together with the Report of the Director	Same.
4	Notice to Mariners. Nos. 13–19	The British Hydrographic Office.
8	Natuurkundige Verhandelingen von der Hollandsche Maatschappij der Wetenschappen te Haarlem. Tweede Verzameling. Deel Zeventiende. Negenteeirde. Erste Stuk	The Dutch Society of Sciences at Haarlem.
	Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857–'59. Naut. Phys. Theil. Abth. II	The Hydrog'l Dept. of the Austrian Imperial
	Mittheilungen aus Justus Perthes' Geographischer Anstalt. 1863. III, IV	Justus Perthes.
	Bulletin de la Societé Imperiale des Naturalistes de Moscou. 1862. No. 1	The Imperial Society of Naturalists of Mosc
20	Synopsis of Meteorological Observations for the months of April and May, 1863, taken by J. B. Trembley in the city of Toledo, Ohio	J. B. Trembley, M. D.
24	Bulletin mensuel de la Societé Imperiale Zoologique d'Acclimatation. Tome X. No. 5.	The Imperial Zoological Society of Acclimat
26	Tables of Melpomene, by E. Schubert	The American Nautical Almanac.
30	Report of the Astronomer Royal to the Board of Visitors of the Royal Observatory, Greenwich. 1863	G. B. Airy, Esq.
July 2	Bulletin mensuel de la Societé Imperiale Zoologique d'Acclimatation. Tome X. No. 4.	The Imperial Zoological Society of Acclimata
14	Notice to Mariners. Nos. 20–24	The British Hydrographic Office.
20	The British American, a monthly magazine devoted to literature, science and art. Vol. I, No. 1. May, 1863	The Editors.
Aug. 3	The British American. 1863. Nos. 2, 3, 4	Same.
	Monthly Meteorological Register at the Provincial Magnetical Observatory, Toronto, Canada West. 1863. February and May	The Provincial Mag. Observatory at Toronto,
	Mean Meteorological Results at Toronto for the year 1862	Same.
	Quarterly Report of the Meteorological Society of Scotland for the quarter ending March 31, 1863	The Meteorological Society of Scotland.
	Notice to Mariners. Nos. 26, 27	The British Hydrographic Office.
	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1863. V	Justus Perthes.
	Annuaire de la Societé Meteorologique de France. Tome VIII. 1860. 1re Partie. F. 9–15	The Meteorological Society of France.
8	Bulletin mensuel de la Societé Imperiale Zoologique d'Acclimatation. Tome X. No. 6.	The Imperial Zoological Society of Acclimata
10	Notice to Mariners. Nos. 28–32	The British Hydrographic Office.
22	Notice to Mariners. Nos. 33–35	Same.
24	Forty-fifth Annual Report of the Trustees of the New York State Library. 1863	The New York State Library.
Sept. 23	Executive Documents, 37th Congress, 2d session. Vol. 6	The U. S. House of Representatives.
	Executive Documents, 37th Congress, 2d session. Vol. 8	Same.
	Executive Documents, 37th Congress, 3d session. Vol. 5	Same.
28	Der Seehafen Geestemiende	Consul General of Hanover, at New York.
30	Proceedings of the American Academy of Arts and Sciences. Vol. VI	The American Academy of Arts and Sciences.
	Memoirs of the American Academy of Arts and Sciences. New series. Vol. VIII. Part 2	Same.

Date.	Publications.	From whom received.
ct. 12	Nautisches Jahrbuch für 1864. Dr. C. Bremiker	
22	Philosophical Transactions of the Royal Society of London for the year 1862. Vol. 152. Parts 1 and 2	The Royal Society of London.
	Observations de la Grande Nebuleuse d'Orion, faites a Cazan et a Poulkova, par O. Struve	Prof. O. Struve.
	Beobachtungen des Mars un die zeit der opposition 1862. Von Dr. A. Winnecke	Same.
	Positiones Mediae Stellarum Fixarum in Zonis Regiomontanis a Bessilio inter + 15° et + 45° Declinationis Observatorum, &c	Same.
	Ueber die Sonne, von Dr. A. Winnecke	Same.
	20 Juin–2 Juillet, 1862. Observations faites a l'epoque ou le plan des anneaux de Saturne passait par le Soleil, par O. Struve	Same.
	The Royal Society, 1st December, 1862	The Royal Society of London.
	Proceedings of the Royal Society of London. Vol. 12. Parts 55 and 56	Same.
	Proceedings of the Royal Geographical Society of London. Vol. VII. No. 2	The Royal Geographical Society of London.
	Notice to Mariners. Nos. 42–44	The British Hydrographic Office.
	Transactions of the Bombay Geographical Society from June, 1860, to December, 1862. Vol. XVI	The Bombay Geographical Society.
	Bulletin de la Societé Imperiale des Naturalistes de Moscou. 1862. Nos. 2–4	The Imperial Society of Naturalists of Moscow.
	Annuaire de la Societé Meteorologique de France. Tome X. 1862. Bulletin des Seances. F. 13–23	The Meteorological Society of France.
	Du Climat de Genève. Par E. Plantamour	Prof. E. Plantamour.
	Résumé Meteorologique de l'Annee 1861. Pour Genève et la Grand St. Bernard. Par E. Plantamour	Same.
	Reportorium für Meteorologie. Dr. L. F. Kämtz. Band II. Part 2	Dr. L. F. Kämtz.
	Mittheilungen aus Justus Perthes' Geographischer Anstalt. 1863. VI, VIII	Justus Perthes.
31	Annuaire de la Societé Meteorologique de France. Tome XI. F. 1–6	The Meteorological Society of France.
	Bulletin mensuel de la Societe Imperiale Zoologique d'Acclimatation. Tome X. No. 7.	The Imperial Zoological Society of Acclimatation.
ov. 2	Extension of the Triangulation of the Ordnance Survey into France and Belgium, with the measurement of an Arc of Parallel in latitude 52° N., from Valentia in Ireland to Mount Kemmel in Belgium	The British Government.
16	Observatorio Magnetico y Meteorologico del Real Colegio de Belen de la Compania de Jesus en la Habana. January–June, 1863	The Mag. and Met. Ob'ry of the Royal College of Belen.
	Statuten der Astrononischen Gesellschaft. Tubigen. 1863	
	The observed Motions of the Companion of Sirius considered with reference to the Disturbing Body indicated by Theory. By T. H. Safford. 1863	T. H. Safford, Esq.
	Quarterly Report of the Meteorological Society of Scotland for the quarter ending June 30, 1863	The Meteorological Society of Scotland.
	Tables of Victoria, computed with regard to the Perturbations of Jupiter and Saturn, by F. Brünnow	The Observatory at Ann Arbor, Michigan, U. S.
	Notice of Prof. J. S. Hubbard, U. S. N., and Major Hunt, U. S. Engineers. Action of the Connecticut Academy of Arts and Sciences	Prof. C. S. Lyman.
	Nederlandsch Meteorologische Jaarbock. 1862	The Royal Netherlands Meteorological Institute.
	Annales de l'Observatoire Royal de Bruxelles. Tome XV	The Royal Observatory of Brussels.
	Annuaire de l'Observatoire Royal de Bruxelles. 1863	Same.
	Academie Royale de Belgique (Extr. des Bulletins. 2^{me} serie. T. XIII. No. 5.)	Same.
	De la Variation Annuelle de l'Inclinaison et de la Declinaison Magnetique a l'Observatoire Royale de Bruxelles, depuis 1827 jusqu'a ce jours. Par A. Quetelet	Same.
	Mittheilungen aus Justus Perthes' Geographischer Anstalt, &c. 1863. IX	Justus Perthes.
28	Denkschriften der Kaiserlichen Akademie der Wissenschaften. Math-naturw. XXI Band	The Royal Academy of Sciences of Vienna.
	Die Feierliche Sitzung der Kaiserlichen Akademie der Wissenschaften am 30 Mai, 1862	Same.
	Physicalische Verhaltnisse und Vetheilung der Organismen im Quarnerischen Golfe. Von Dr. J. R. Lorenz	Same.
	Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Math-naturw. 1862. I. Ab. Nos. 8–10. II Ab. 9, 10. 1863. I Ab. 1–3. II Ab. 3, 4	Same.
	Achtundvierzigster Jahresbericht der Naturforschenden Gesselschaft in Emden. 1862. Von Dr. H. Metger	The Academy of Natural Sciences in Emden.
	Kleine Schriften der Naturforschenden Gesselschaft in Emden. No. X	Same.
	Trabalhos do Observatorio Meteorologico do Infante D. Luiz na Escola Polytechnica Lisbon. Vols. for 1861 and 1862	The "Observatorio Meteorologico do Infante D. Luiz."
	On the Views of Biot and Weber respecting the relations of the Hindu and Chinese Systems of Asterisms; with an addition on Muller's Views respecting the same subject, by Prof. Wm. D. Whitney	Prof. Wm. D. Whitney.
30	Notice to Mariners. Nos. 45–50	The British Hydrographic Office.
ec. 7	The Transactions of the Academy of Science of St. Louis. Vol. I. No. 1	Prof. Baird.
21	Notice to Mariners. Nos. 51–58	The British Hydrographic Office.
29	Report of the Comptroller of the Currency	Hugh McCulloch, Esq., Comptroller.
31	Philosophical Transactions of the Royal Society. Vol. 153. Part I	The Royal Society of London.
	Greenwich Magnetical and Meteorological Observations for the year 1861	Same.

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